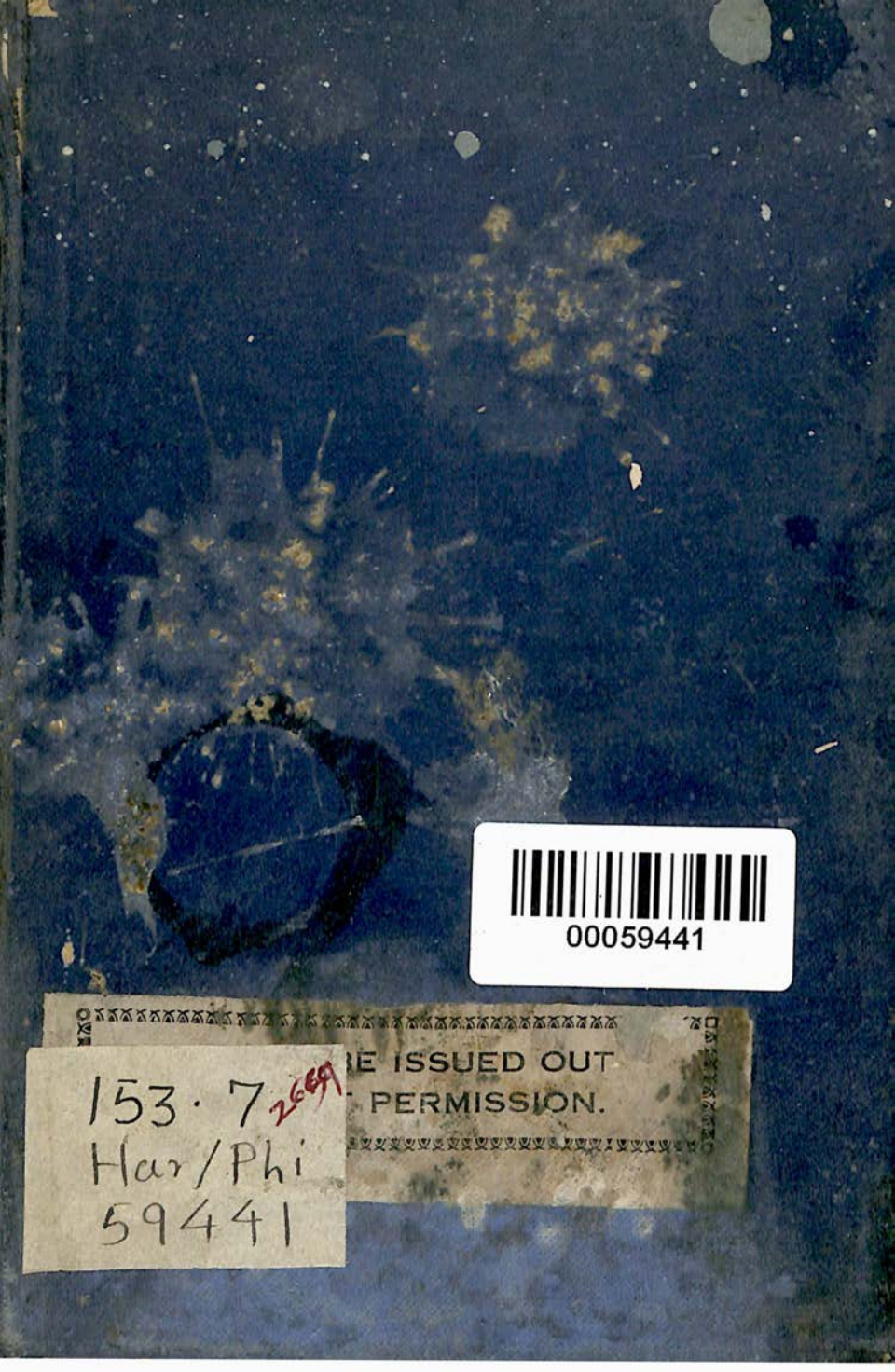
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PHILOSOPHY

OF

THE UNCONSCIOUS.

BY

EDUARD VON HARTMANN.

SPECULATIVE RESULTS ACCORDING TO THE INDUCTIVE METHOD OF PHYSICAL SCIENCE.

5 C 441

Authorised Translation

BY

WILLIAM CHATTERTON COUPLAND, M.A., B.Sc.

IN THREE VOLUMES.

VOL. I.

LONDON:
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TRANSLATOR'S PREFACE.

THE author of the following work has so clearly explained its purport, both in the course of the work itself and in the prefatory remarks, that few words are required by way of introduction from a foreign pen. It is true the class of books to which the "Philosophy of the Unconscious" belongs is all but unrepresented in our literature, but the absence of similar home-productions can no longer be held to imply either an inability to comprehend their scope or an indifference to their results. To what shall we attribute the welcome accorded of late to certain reproductions and elucidations of the master-works of modern Transcendentalism, if not to the awakening of a long-repressed desire to re-examine the foundations of a spiritual fabric, for whose stability an instinctive confidence alone made answer? To many two attitudes of mind have become insupportable—that of total unconcern about fundamental truth, and that of unthinking acquiescence in the admission of merely juxtaposed and uncommunicating spheres of positive knowledge and impenetrable nescience. What would you have, says the scientist, but an ever-widening view of Nature's operations?—is it not enough, cries the theologist, to be sure that there is a God, although "His ways are past finding out?" To questions so different in substance, but so alike in their flavour of self-complacency, this book is in effect an answer. That Von Hartmann appreciates

the gains of positive inquiry no reader of a work replete with illustrations from all the sciences will for a moment doubt; but, on the other side, he is an unfaltering ontologist, and believes no less firmly that he that hath eyes to see can divine the riddle of the universe, and that there is no peace for the intellect and heart until Religion, Philosophy, and Science are not merely "reconciled," but are seen to be one, as root, stem, and leaves, are organic expressions of one same living tree.

The English reader may wish to know something of the author himself, and the circumstances of the production of this book. More than enough has been written on this subject in Germany, but all that need be said on the matter here may be told in a very few words. Dr. Eduard von Hartmann is a retired military officer, compelled almost at the outset of his career to abandon his profession through a serious affection of the left knee-cap. Constrained to alter his plan of life, the width and varied nature of his attainments (mostly independently acquired) caused him not a little embarrassment. After some wavering, and after casting many longing looks on the fair realms of art, in some of whose departments his talents would doubtless have commanded success, he obeyed the whispers of his most powerful genius, and yielded himself up once and for all to the calls of a career of philosophical authorship. It will be noticed by the reader with what keen satire he speaks of the professed students and teachers of the Science of Sciences. In this he is at one with his immediate forerunner, and a far older and more potent name. But the circumstances of modern life are quite other than they were in the age of the Sophists; and positions that did not cramp the genius of a Kant, a Schelling, and a Hegel, can hardly of necessity be the fortresses of orthodox opinion the modern free-lance would have the world believe. At the same time we can well imagine that the atmosphere of a University would hardly have been favourable to that direct intercourse with the mind

of the people which the literary spirit of our author craved; and Von Hartmann, like Socrates, doubtless took good counsel of his "Dæmon," when he went straight to the public, and confided in his own intellectual strength to give him a wide and attentive hearing.

In the spring of 1868, when in his twenty-seventh year, Eduard Von Hartmann placed in the hands of a well-known Berlin bookseller the original draught of the work now translated, with the title "Philosophy of the Unconscious, Popular Physiological-Psychogical-Philosophical Inquiries on the Manifestation and Essential Nature of the Unconscious, and the Origin and Meaning of Consciousness." The publisher, with unusual penetration, saw the value of the work, and in November 1868 the book appeared in one volume, the first words of the proposed title alone being retained.

Since 1868 Von Hartmann has been an untiring and voluminous writer. The full list of his publications extends to about a score of volumes, some of them running to 700 or 800 pages, to say nothing of magazine articles and such like trifles. Any one who would pronounce an adequate judgment on the author's philosophical powers would have undoubtedly to make acquaintance with the more important of these; and, in justice to the author, I append a few words of his own concerning the book which has made his reputation. "It is not the product of reflection and maturity, but the bold experiment of juvenile talent, presenting all the defects and qualities of the work of youth. Fifteen years have passed since the manuscript first went to press, and I should conceive many things differently to-day than I presented then." This unripeness has been in a measure corrected by the Appendix and supplementary notes, and the reviewer should bear these in mind when exercising his critical function. That the work is open to criticism of various kinds the present translator does not for a moment doubt; but, when criticism has done its worst, he believes that there will be

enough of worth left to justify the enthusiasm the "Philosophy of the Unconscious" has evoked in the land of its birth, as also to secure it a welcome from a wide circle of new and appreciating readers.

LONDON, *March* 1884.

AUTHOR'S PREFACE TO THE SEVENTH EDITION.

THAT I am in general no friend of prefaces, the previous six editions of this book have proved. When, however, a work meets with so kindly and indulgent a reception as the present one, it might be interpreted as a kind of affectation in the author if he persistently avoided that direct communication with his readers which is customary in prefaces. As I know myself to be as free from such prudery as from obtrusiveness, I will no longer abstain from appearing before the curtain in the usual fashion, and from discussing certain points of a somewhat external or even personal nature,—the less, as the attacks of opponents on my character and private life have already compelled me, by a frank description of my course of life,[1] to afford my readers the requisite materials for forming a judgment of their own on the value of those attacks.

I can truly say that never was author more surprised by the success of his book than I by that of the "Philosophy of the Unconscious." A moderate acquaintance with the history of the book-trade as regards philosophical literature would alone have sufficed to destroy any possible illusion of a young author's vanity; the lamentations of Schopenhauer on the tardiness with which a really important work makes its way, bore emphatic testimony to the compatibility of a certain self-consciousness with incredulity concerning outward literary results; public opinion at the time of the

[1] Cf. "Die Gegenwart," 1875, Nr. 1–3. The article has been reprinted in the "Gesammelte Studien und Aufsätze gemeinverständlichen Inhalts."

formation of the North German Alliance appeared moreover as unfavourable as possible for the reception of a systematic philosophical work; and lastly, I was, at the bottom of my heart, far too much of a Pessimist not to be prepared for the worst, as was only naturally to be expected from the apathy of the public as regards philosophical things in general, and the ill-will of the professional class towards the dilettante interloper in particular. If the result proved this prognosis to be erroneous, the reason was partly that it had been founded only on an observation of symptoms discernible on the mere fringe of the spiritual life; partly that journalism busied itself with unwonted energy with the new venture; partly, lastly, that my publisher had taken an especial interest in my efforts, and zealously exerted himself to push the sale of the book (all risks being from the first taken on his own shoulders).

The importance of the latter fact had been entirely overlooked by Schopenhauer, who had imagined that it was enough to write an important book and to print it at his his own cost, and the rest was the affair of the public. This view is, however, just as one-sided as the opposite one, that an altogether worthless book of an unknown author without any attraction for the public, even in a bad sense, could be helped to a trade success by a mere publisher's puff. Whilst all the industry of a publisher in respect of a book, that is not recommended by one reader to another, always leads only to commercial loss, it is true that what is good and important, commonly at the end of a chapter of accidents, is preserved from total oblivion, but it may have to make its way with extreme slowness.

If Schopenhauer had had my good fortune to find a publisher, who would have personally interested himself for his great work, those long decennia of entire neglect would have been spared him, which contributed so much more and more to embitter his peculiarly constituted mind, and to paralyse his rich creative powers. The consequence

would have been, that the German nation would have been imbued a generation earlier with the rich spirit of the Schopenhauerian Philosophy, and that the leisured philosopher would have received a powerful stimulus to apply his extraordinary talent during his long lifetime to the accomplishment of far more numerous and varied undertakings. In both respects the indirect effects, as regards the present mental horizon of the educated public in Germany, might have been simply incalculable.

That *Reviews* of the "Philosophy of the Unconscious" appeared in so unusually large a number, was doubtless owing to the circumstance that this book was discovered to afford a fit subject for discussion, not only by the professed philosophical magazines and the ordinary literary journals, but also by most of the more considerable reviews both at home and abroad, by the majority of the theological periodicals, by the most influential political newspapers of Germany and Austria, as well as, lastly, by certain educational and medical papers, and that the publishing house had not omitted to send copies for review to all these categories of periodical literature. The book was acknowledged, even by its chief opponents, in spite of the utmost deprecation of its fundamental tendency and particular assertions, to be yet for the most part a noteworthy phenomenon of recent philosophical authorship, and found perhaps among the reviewers of the literary and political journals so many warm friends, because among these the philosophy of Schopenhauer had prepared the ground for its comprehension. The two critics who were the first decidedly to point out the significance of the book were Councillor Dr. Rudolph Gottschall, and Dr. David Asher; those who perhaps exercised the relatively largest influence on the rapid diffusion of the book, Dr. Heinrich Landesmann (Hieronymus Lorm), and Dr. Carl Baron du Prel. All four stood substantially under the influence of Schopenhauer. But, likewise, on the part of certain Hegelians, the book early received warm acknowledgments, *e.g.*,

from Professor Dr. Ernst Kapp, and Dr. Max Schasler (President of the Philosophical Society of Berlin). It would lead me too far to cite here all the names of those to whose kind indulgence in their public criticism of my efforts I owe aid and encouragement to further labour; to all these men I herewith render my sincere thanks.

Not less, however, do I owe my highly-esteemed opponents and foes the greatest gratitude, who, by their unwearied attacks on my performances and efforts, have ever and anon turned the flagging attention of the public to my writings, and have kept alive the interest therein. Unhappily I must own, that among the many, who felt themselves *called* to critically annihilate me, there were only very few who could be deemed competent to speak on such questions. This phenomenon is quite natural, and is ever recurring; the first polemical demonstrations against a novel doctrine are almost always lacking in that unprejudiced perception and matter-of-fact objectivity, which can only appear in the course of time through a gradual clearing-up of speculative differences.

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But now that a philosophical book by a hitherto unknown author should so rapidly make its way in so many circles of the educated public, and that so many writers should be induced to undertake its critical examination in books, pamphlets, and journals, further needs for its explanation the recognition of two pre-suppositions founded on the circumstances of the time, namely, in the first place, a *fierce philosophical hunger* on the part of the public at large, concealed beneath the apparently extreme apathy in regard to philosophical inquiries; and, secondly, a state of *unusual* prostration of the Guild-philosophy professionally bound to satisfy this need. The attitude of contempt and scorn of philosophy so fashionable in the fifth and sixth decades of the century had, at the end of the last decennium, attained a pitch which had something forced and affected about it, like the old whistling of the peasant-boy at the dark churchyard; the unmetaphysical

empiricism, which little by little began to become alarmed at its self-glorification, was ripe for a sudden conversion, and what had prevented this conversion for so many years was only the forbidding aridity and poverty of the academical philosophy, which could not but strengthen the common contempt of philosophy in the minds of its entertainers. ' At this juncture appeared the "Philosophy of the Unconscious;" the public was able to absorb so relatively large a number of copies of this metaphysical work, because it had become, during the long period of philosophical unproductivity, as parched as a field after a prolonged drought, and the *exaggerated* estimate frequently formed of the "Philosophy of the Unconscious" must be in large measure attributed to the circumstance, that its value was measured against the background of the contemporary book-market of the Guild-philosophy, which gave it an intrinsically undeserved prominence by the force of contrast.

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The rapidly succeeding editions offered an opportunity to continually revise the matter of the work, to more fully elucidate those passages which had given rise to frequent misunderstandings, to fill up minor gaps which had become perceptible in the sequence of thought, to open up more varied prospects, if only by short indications, to lay bare more evidently and to fathom more deeply the inner connection of the principles, and to take account of the relevant progress of the special sciences in supplementary paragraphs. Welcome as this opportunity was to me on several grounds, no less burdensome was its frequent repetition. To work additions into a finished book is a far more troublesome and time-absorbing occupation than one may think who has not himself attempted it; and what was eminently distracting and disagreeable was the annual recurrence of the press corrections. To me the first reading through of what I have myself written is an extremely painful task; but to be obliged to be always

reading one's own production over and over again becomes at last so loathsome, that one gets to wonder how a third person can find any interest in it. Accordingly I felt it as a kind of release when the publishing firm proposed, on the preparation of the fifth edition, to stereotype the text. I felt very sensibly what important considerations oppose such a fixation of the work of a living author, but it still remained open to me to supplement subsequent additions, and the wish to free myself from the annual corrections, and once for all to have done with the book, was too urgent for me to be deterred by such scruples. It is a painful position, when a writer has given his interest and thought to new tasks, and is constantly hindered and distracted by the firstlings of his brain, who have become real powers, ever anew claiming at the hands of their father their right to further care and culture.

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That part of the "Philosophy of the Unconscious," which for some years had least satisfied my augmented demands, was Section A, on "The Manifestation of the Unconscious in Bodily Life." No one will wonder at this who is familiar with the progress of Physiology in general and that of Nervous Physiology in particular in the last decennium. When in the winter 1864–65 I wrote this section, the sources from which I had drawn my material were even then not of the newest date; I name in particular "Wagner's Dictionary of Physiology," and the manuals of Physiology by Johannes Müller, Valentin, and Burdach.[1] For certain chapters (*e.g.*, that on the Reparative Power of Nature) I was simply *compelled* to have recourse to older works, or to the writings of Burdach, because the more recent Physiology carefully ignored

[1] That to preserve the popular character of my book I have studiously refrained from quoting the authorities for my examples in detail has been largely laid hold of to my disparagement by some of my opponents, wherefore I now in the Appendix and Addenda furnish my vouchers.

everything that could not be forced into the materialistic mould. Here, however, a change for the better deserves to be signalised.

On the preparation of the third and fifth editions I hesitated considerably whether I should not subject Section A to a complete reconstruction, but, after mature reflection, came to a negative conclusion. A philosophical, far more than any other scientific work, is bound to take account in its disposition and architectonic of artistic considerations, which of course need only have unconsciously co-operated in its composition. And as it is a dubious affair to alter an architectural plan or a drama, so too in the architectonic of a philosophical work, one removes undeniable errors and defects, and introduces fresh incongruities and disharmonies, of which there had been no thought. The connoisseur always sees, thereafter, that the work is not out of one mould, that he has patch-work and piece-work before him. Better is it, in such a case, one leaves the old with its defects just as it is, and *adds* something altogether new. This holds good not only for works of art, but also for philosophical works; for nowhere is it less imperative to set forth the truth as finished result than in Philosophy, where, on the contrary, what is strictly instructive and stimulating for the reader is to be sought in the opening the mental eye to a growing and broadening truth. Accordingly I have preferred not to withhold from the new readers, whom the "Philosophy of the Unconscious" hopes to obtain in this new edition, the original draught of Section A, but instead of a remodelling of the same, to add as an Appendix a dissertation "On the Physiology of the Nerve-Centres," from which they may perceive in what manner I should now treat this part in the event of a fresh composition. At the same time this Appendix serves as a *supplement* to Section A, the knowledge of which it presupposes in respect to the present advanced stage of our knowledge of the physiology of the Nervous System. Repetitions from

the text of the "Philosophy of the Unconscious" I have endeavoured to avoid, so far as the necessary connection of the dissertation admitted. As this Appendix is a *physiological*, so my book, "Truth and Error in Darwinism" [reproduced entire in the "Journal of Speculative Philosophy" (St. Louis, 1877–78)] forms a *biological* complement to the natural-philosophical part of the "Philosophy of the Unconscious," especially to Chapter VIII. A; the close connection of the two supplementary writings will not escape the attentive reader.

I am quite conscious of the difficulty of my position with regard to contemporary representatives of Physical Science. They are either adherents of the old school, *i.e.*, they pay homage to a so-called exact empiricism, which never ventures to elevate its glance from the scrutiny of the particular to a more general survey of the great whole, and cross themselves in the presence of all philosophy; or they aim at a natural-philosophical theory of the world —are thus adherents of Darwinism in its crass mechanical and anti-teleological form. The one class, as matter of course, has a horror of *all* philosophy as such, no matter whether the latter endeavours on its part to strike up an alliance with Physical Science or not; the other class recognises, indeed, in principle the necessity of an understanding between Natural Science and Philosophy, but thinks it sees in the teleological metaphysic espoused by me the opponent of that philosophy, to which alone it hopes to throw a bridge. Thus it comes to pass that the one part of scientists ignores me because I am *philosopher*, the other combats me because I am *such* a philosopher. But already the first signs of a rising generation are discernible, which recognises not only the title of philosophy in general, but also the title of an idealistic philosophy beside and above the mechanical cosmic theory of the Sciences of Matter, a union, which alone is able to reconcile that Idealism, to which the German people owes its greatness, with the results of the most recent investigation,

and to obviate a total breach between the Future and the Past, between the Intellect and the Heart. It is my firm conviction that the exclusively mechanical Cosmism of Darwinism is only an historical transition from the prior shallow Materialism to a complete and whole Ideal-realism, and will only serve to effect and facilitate the passing of the living and rising generation of physical inquirers from one pole to the other. In furthering this indispensable and inevitable reconciliation of modern Physical Science, and its grand but one-sided results, with the idealistic culture of our nation, I believe that I am in fact doing a better service to Natural Science than those exclusive devotees of the same, who possess the in itself estimable courage of consistency, of desiring to subject the whole modern theory of the world to a radical transformation, according to the partial method of Physical Science, in which the highest spiritual treasures of our civilisation must perforce fall a sacrifice to consistency.

Until the coming race of naturalists acknowledges my efforts in this direction I must be satisfied with the recognition, which has already been accorded thereto in rich measure by those representatives of our idealistic culture, who, far removed from ignoring or condemning the results of modern physical science, perceive *the necessity of an organic fusion of the same with idealism*, but have hitherto missed a suitable leader in the solution of this problem declared impossible by the exclusive representatives of Physical Science itself. On this ground for some time even Theology has begun to prize in me a valuable ally, although hardly any one has more plainly declared than I, that Christianity is no longer a vital factor of our developing civilisation, and has already traversed all its phases.

On this point I am perfectly clear, that in future as hitherto I shall please no party and no school; but just as certain also am I that this is at least a negative condition for everything important, although this character-

istic applies just as well to the fanciful and absurd. Although, however, I may give satisfaction to no party and to no school, yet at least all know precisely and unambiguously where I stand, since what I will and what I mean, I have at all times said straight out, and sometimes perhaps all too clearly. In fact, this frank attitude of mine has made it very easy for the dissident schools to take up on their part likewise a clear position in regard to me, what is displeasing to them to blame and reject, and what is congenial to them to acknowledge with respect.

. . . . . .

EDUARD VON HARTMANN.

BERLIN, *October* 1875.

AUTHOR'S PREFACE TO THE EIGHTH EDITION.

ALTHOUGH, since the appearance of the seventh edition the unfavourable circumstances of the times have pressed in an unusual degree on the whole book trade, and scientific literature in particular has been most seriously affected by the contraction of the literary budget of the reading public, yet it is permitted me to issue an eighth edition, and I feel the greater debt of gratitude to the public for this persistent and unusual sympathy, as two years ago it was considered that the demand for the "Philosophy of the Unconscious" in Germany had been sufficiently met for some time to come by the first six editions. If the erroneousness of this conjecture forms, on the one side, for the author a grateful encouragement to his labours, yet, on the other hand, it is also not to be denied that in the extensive sale which the "Philosophy of the Unconscious" has found in the circles of the general public (the first seven editions represent over ten thousand copies) there lies a not inconsiderable danger for the correct estimate of the collective philosophical tendencies of the author, because a historically established judgment on the part of experts, which might serve as a standard to the laity, has not yet been formed, and the judgment of the laity is commonly determined more by what strikes the eye than by the less readily discernible inner nature of things. Only too many of those, who buy or borrow the "Philosophy of the Unconscious," feel their "metaphysical need" satisfied when they have turned over the chapters on Love and the Misery of Existence, and think they may

now chime in with a good conscience when the topic of conversation is the "Philosophy of the Unconscious." "Philosophy of the Unconscious, Continuator of Schopenhauer, fashionable representative of Pessimism," such one-sided and often uncomprehended catchwords are sufficient to legitimate them as connoisseurs; the phrases get attached to the name "Hartmann" like a label, which must henceforth adhere to it as if they were a part of the author's own signature. Had the "Philosophy of the Unconscious" lived through its two or three instead of eight editions in nine years, and had it not broken through the sphere of a scientific circle of readers in this time, it is probable the fame of its author would have been less in advance of his performances, but in compensation his name would not have been linked with so one-sided a signature, which at present forms a hindrance to the unprejudiced estimation of his later achievements.

My opinion by no means implies that the conquest of the strata of the reading public, who hitherto have stood aloof from all philosophy, is to be deplored because obtained through the "Philosophy of the Unconscious," but only that the stopping half-way of such readers is to be deplored. The clearness and intelligibility of the "Philosophy of the Unconscious" has been abundantly praised; but this is still only very relative, merely conspicuous by comparison with other philosophical works. And no one has ever asserted that for the sake of general intelligibility I have anywhere omitted to dig below the problems as deeply as lay in my power; the "Philosophy of the Unconscious" is thus anything but popular in the sense of the popularisation of scientific results. In fact we hear, even from most laymen, who approach its reading unprepared, that they have not understood the main discussions. What then alone can give the key for judging, remains *un*-understood; but what also without this key *appears* in itself clear and intelligible, is, because conceived out of its systematic connection, necessarily *mis*-understood.

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As an introduction to the author's sphere of thought, are now to be mentioned in the first rank, the "Gesammelte Studien und Aufsätze gemeinverständlichen Inhalts," especially their first three sections, which may serve the purpose of obviating at the outset many errors and misunderstandings with regard to the tendencies of the author. In the second rank, the writings on "The Self-Disintegration of Christianity" [translated in the "Religio-Philosophical Journal," vols. 29–31, appearing in Chicago], and "Truth and Error in Darwinism" [see p. xviii.], of which the former appears suited to render clear the contrast of the author to the shallow negativity of a D. F. Strauss, and to show, that if he combats Christianity, he does this not to combat religion, but to serve religion, and to bring again to honour and to render possible that which has become impossible through its defenders. The study on Darwinism is certainly only to be recommended to such readers as have already been instructed by a more detailed work on the aims and argumentations of Darwinism; as the knowledge of this burning question, however, belongs at the present time to the elements of a higher culture, this supposition will for the most part be already fulfilled, or if not, yet be readily enough made good. Together with the "natural philosophical contributions" (sec. C.) of the "Gesammelte Studien und Aufsätze," this writing forms a suitable naturalistic preparation for the reading of the "Philosophy of the Unconscious."

As every philosophical system is the product of its time, and its historical and scientific significance can only be rightly estimated in its connection with the history of philosophy, the most important preparation for the understanding of the "Philosophy of the Unconscious" is an acquaintance with the preceding systems of German speculation, and with the position which the former, according to the author's aim, is intended to occupy as regards the latter. To afford this historical introduction is the function of sect. D of the "Gesammelte Studien und Aufsätze,"

entitled "The philosophical starry triad of the nineteenth century." Here, without doubt, the layman will encounter many a difficulty; but if he allows himself to be deterred thereby, he has no prospect of overcoming the like difficulties in the still more condensed hints of the "Philosophy of the Unconscious," whilst that which remains obscure in the reading of that introduction can very well be cleared up subsequently by acquaintance with the author's circle of ideas in their systematic connection.

If the above-mentioned natural-philosophical preparation serves the purpose of making intelligible to the reader the reconciliation and fusion of modern physical science and philosophy attempted by me, this historical introduction will enable him to comprehend the synthesis accomplished by my philosophy of two philosophical mental tendencies apparently so antipathetic, which have been fruitful and decisive for the mental life of Germany in the last two generations: Hegelianism and Schopenhauerianism. The *historical* significance of my philosophy must essentially be sought in the two mentioned syntheses; which of the two in an historical point of view deserves the pre-eminence, might be difficult for contemporaries to determine. From the historical point of view the chief value of the Principle of the Unconscious may have to be sought in this, that *only* by this principle are those two syntheses rendered *possible*.

The most important test for the verifying of philosophical systems in real life is to be seen in the solution of the ethical problems resulting from them. The author of a highly defective theoretical philosophy obtains, if not a justification, yet to a certain extent an excuse and personal rehabilitation, if he—at whatever cost of philosophical consistency—advances a powerful and valuable moral cosmic theory. But when such an one makes good its claim in a form possessing certain advantages over all earlier moral standpoints as a natural consequence of the theoretical principles, then the latter obtain

thereby a highly-important indirect confirmation, and the whole system acquires in such a case a far higher philosophical and practical value. The exposition of the ethical standpoint will be the more important for a philosopher, and he will the more urgently wish the cognisance of the same before the pronouncing of a general judgment on his point of view, the more original his theoretic cosmic theory is, the more it contains elements deviating from current opinion, *i.e.*, paradoxical, and the more occasion it gives on this ground to erroneous inferences respecting the practical consequences flowing therefrom. That the "Philosophy of the Unconscious," particularly in consequence of the incoherent apprehension of its pessimism and confusion with the system of Schopenhauer, has led to the grossest misunderstandings as regards its practical consequences, and has thereby called forth reproaches as severe as groundless, is sufficiently well known; and in order that such mistakes may be avoided for the future, I would emphatically advise that, where it is practicable, my readers should make themselves previously acquainted with my ethical views before they undertake the reading of the "Philosophy of the Unconscious." The "Phänomenologie des sittlichen Bewusstseins," now in the press, in which those views are expounded, is an altogether popular work, which, in contrast to the "Philosophy of the Unconscious," requires no previous knowledge in a philosophical or scientific reference, is independently constructed from its foundation, and is therefore very suitable for being read without any previous acquaintance with the rest of my philosophical efforts. Whoever has first made acquaintance with my second chief work will without doubt regard my first main work with quite other eyes, because he brings with him at starting a definite opinion on the practical fertility of the ideas developed therein, which may be described as the counterpart of the paradoxical impression commonly received by unprepared readers.

However much weight may be assigned, in judging a

system, to the sides hitherto discussed, it will yet remain indisputable that the decisive point for the *theoretical* estimation of such must be sought in the fundamental theory of knowledge. The theory of knowledge is the true *philosophia prima;* with the right or wrong attitude to the problems of the theory of knowledge the decision is already made, whether the particular thinker is on the right or wrong road in his efforts to solve the metaphysical problems, and this holds more than ever good of a system of the present time, which has brought to full consciousness the importance of the theory of knowledge, first placed in the right light by Kant, after its treatment had been pushed on one side by the great successors of Kant as a matter already settled by Kant. The whole reach of the theoretical contrast, in which I find myself with respect to Schopenhauer as to all others standing theoretically on Kantian ground, he alone is able to appreciate who has taken the trouble to go through my writings specially devoted to these questions. Such an one will, however, no longer be able to misunderstand the relation of my system, merely hinted at in the "Philosophy of the Unconscious," to the problems of the theory of knowledge, as has happened on the part of those readers of the "Philosophy of the Unconscious" who imagined they could characterise me, despite that diametrical opposition to Schopenhauer, simply as his continuator. All readers, who stand substantially on the ground of the Kantian transcendental Idealism, as represented by Fichte, by Schelling in his youth, by Schopenhauer, and by a part of the Hegelian school, I must beg to read my writings concerning the theory of Cognition *before* the "Philosophy of the Unconscious," and the same holds good in a metaphysical respect of my memoir "on the Dialectical Method" for all adherents of Hegel, who still see in his method an essential and inseparable element of his philosophical achievements. For laymen, on the contrary, who have hitherto kept off the mistaken paths of subjective Idealism and the Hegelian Dialectic, the reading of the speci-

fied writings may be less necessary and not even recommendable before acquaintance with the Philosophy of the Unconscious, because the material difficulties to be overcome in them might easily deter from further philosophical studies. Only the preface to the second edition of the "Kritische Grundlegung des transcendentalen Realismus" I could wish to see read also by laymen *before* the Philosophy of the Unconscious, because they will get therefrom at any rate an inkling, that I raise the claim, to have made the first decided step in the Theory of Knowledge since Kant.

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I conclude with some words from my preface to the French Translation, p. iii., "La philosophè de l'Inconscient n'est pas un système: elle se borne à tracer les linéaments principaux d'un système. Elle n'est pas la conclusion, mais le programme d'une vie entière de travail: pour achever l'œuvre, la santé et une longue vie seraient nécessaires." May there be found in the sum of my other publications the honest attempt at a payment on account of the assumed obligation, and the "Philosophy of the Unconscious" be henceforth read and judged as an integral part of the totality of my philosophical works.

EDUARD VON HARTMANN.

BERLIN, *January* 1878.

AUTHOR'S PREFACE TO THE NINTH EDITION.

As the eighth edition of this work appeared simultaneously with my second principal work, so I issue the ninth simultaneously with my third principal work. If at the close of the preface of the eighth edition I described the "Philosophy of the Unconscious" as the programme of my life, the two other extant chief works yield the proof that hitherto at any rate good will has not been wanting to carry out the programme.

The "Phänomenologie des sittlichen Bewusstseins," which appeared at the end of the year 1878, is no complete system of Ethics, but only the first introductory part of such, and therefore described by its title as "Prolegomena to every future Ethics." The System of Ethics would with me embrace, besides this introductory ethical doctrine of Principles, a Social Ethic and an Individual Ethic. The working out of an Individual Ethic appeared to me least urgent, that of Social Ethic, on the contrary, very desirable indeed, but yet bound up with considerable material difficulties, which it is hoped will receive some illumination by the progress of social-political legislation. Accordingly, while for the treatment of Social Ethics some delay might appear desirable, I had excellent reasons for the speedy presentation of my "Religious Philosophy;" for, for the treatment which Social Ethics might eventually experience at my hands there were numerous hints to be found, both in the "Phänomenologie des sittlichen Bewusstseins" as well as in other of my writings; but my attitude towards Religious Philosophy could on the basis

of the "Philosophy of the Unconscious" and the little monograph on the Self-disintegration of Christianity hardly even approximately be rightly estimated.

The "Phänomenologie des sittlichen Bewesstseins" turned the polemic of the philosophers and theologians against me into a new phase. Hitherto I had been met with the argument that Pessimism must be intrinsically without an Ethic; but now, when the Ethics of Pessimism had in principle come to light, that argument could no longer hold water, and it was now contended that this Ethics was worth nothing, because it was the Ethics of Pessimism. Thereby the contest concerning Pessimism was renewed, but also at the same time carried over to a new battlefield. I felt moved to plunge into this discussion with some journalistic disquisitions and essays, which, at the end of 1880, were collected, and appeared in pamphlet form under the title "Zur Geschichte und Begründung des Pessimismus." The first shows that not Schopenhauer but Kant is the father of the Pessimism advocated by me, whereas Schopenhauer has one-sidedly disfigured and spoilt the Kantian Pessimism; the second refutes the objections which deny that Pessimism is a problem of science, or soluble by science; the third has the task of sharply separating the ethically valuable Pessimism advocated by me from sundry ethically questionable and injurious varieties of Pessimism, and the fourth gives a phenomenology of Suffering, as it were, which already serves as a transitional chord from Ethics to the Philosophy of Religion.

The effects of my "Phänomenologie" on the public reach manifestly less widely and more deeply than those of the "Philosophy of the Unconscious;" the polemic called forth by the former is, it is true, not yet free from obliquities and misunderstandings, but it is far more scientific, more intelligent and thorough than that, which, in the first four years after the appearance of the "Philosophy of the Unconscious," saw the light. The polemic on the

"Phänomenologie" has manifestly not a little contributed to correct the previous judgment of the "Philosophy of the Unconscious," and to silence much superficial chatter. I hope that this will be the case in still higher degree with my "Philosophy of Religion," which yields the proof that my philosophy is just as little non-religious as non-ethical, but in both respects stands in perfect continuity with the previous course of development of the consciousness of humanity.

In the "Philosophy of Religion" my standpoint, as I have already indicated in the closing section of the "Self-disintegration of Christianity," specially represents a synthesis of the Christian and Indian Religions, or a synthesis of Hegelianism and Schopenhauerism. For that purpose it was important to me to come to terms with the present leading representatives of a speculative Christian Theology, as this has been developed from the twofold starting-point of Hegel and Schleiermacher. I have done this in the memoir: "Die Krisis des Christenthums in der modernen Theologie." As in the "Self-disintegration" I had criticised the vulgar liberal Protestantism, so here speculative Protestantism, and by how much the latter is philosophically more considerable and of greater religious worth than the former, so much the more important is also the critique of the latter than that of the former. But as the subject is more difficult and requires a subtler handling, the later writing has by no means received the same amount of notice as the former; it may be that this is owing in part to the circumstances of the times.

My third principal work consists now of two parts; the first, historically critical part, appeared at the end of 1881, under the title: "Das religiöse Bewusstsein der Menschheit im Stufengang seiner Entwickelung;" the second, systematic part, is issued simultaneously with this ninth edition of the "Philosophy of the Unconscious," under the title, "Die Religion des Geistes." The first part deduces from the previous course of evolution of the religious conscious-

ness of humanity by immanent criticism that stage as historical postulate, to which Religion must accordingly in consistency be elevated; the second part systematically carries out the point of view merely hinted at in the first, not, however, in dogmatic, but in phenomenological form, *i.e.*, by a psychological analysis of the religious consciousness and by deduction of its metaphysical postulates and ethical consequences.

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EDUARD VON HARTMANN.

BERLIN, *August* 1882.

ROYAL ASIA

PHILOSOPHY OF THE UNCONSCIOUS.

INTRODUCTORY.

General Preliminary Observations.

(*a.*) *Object of the Work.*

"*To have ideas, and yet not be conscious of them,*—there seems to be a contradiction in that; for how can we know that we have them, if we are not conscious of them? Nevertheless, we may become aware indirectly that we have an idea, although we be not directly cognisant of the same" (Kant, "Anthropology," sec. 5, "Of the ideas which we have without being conscious of them"). These clear words of the great clear thinker of Königsberg offer at once a starting-point for our investigation, and the field of inquiry itself.

The sphere of Consciousness is like a vine-clad hill which has been so often ploughed up in all directions, that the thought of further labour has become almost loathsome to the public mind; for the looked-for treasure is never found, although rich and unexpected crops have sprung from the well-worked soil. Mankind very naturally began its researches in Philosophy with the examination of what was immediately given in Consciousness; may

it not now be lured, by the charm of novelty and the hope of a great reward, to seek the golden treasure in the mountain's depths, in the noble ores of its rocky beds, rather than on the surface of the fruitful earth? Undoubtedly auger and chisel and prolonged irksome labour will be needed before the golden veins are reached, and then a tedious dressing of the ore ere the treasure be secured. Let him, however, who is not afraid of toil follow me. Is not indeed the supreme enjoyment to be found in labour itself?

The conception "unconscious idea" is certainly somewhat paradoxical to the *naïve* understanding, but the contradiction contained therein is—as Kant says—only apparent. For if we can only be cognisant of the actual contents of consciousness—thus can have no knowledge of aught out of consciousness—by what right do we assert that that, whose existence is revealed in consciousness, could not also exist outside our consciousness? Truly in such a case we should be able to affirm neither existence nor non-existence, and accordingly would have to rest content with the assumption of non-existence, until in some other way we acquired the right to make a positive affirmation of existence. This has generally been the view adopted up to the present time. The more, however, Philosophy has abandoned the dogmatic assumption of immediate cognition through sense or understanding, and the more it has perceived the highly indirect cognisability of everything previously regarded as immediate content of Consciousness, the higher naturally has risen the value of indirect proofs of existence. Accordingly, reflective minds have from time to time appeared, who have felt constrained to fall back upon the existence of unconscious ideas as the cause of certain mental phenomena otherwise totally inexplicable. To collect these phenomena, to render probable the existence of unconscious ideas and unconscious will from the evidence of the particular cases, and through their

combination to raise this probability to a degree bordering on certainty, is the object of the first two sections of the present work. The first treats of phenomena of a physiological and zoopsychological nature, the second deals with the department of mental science.

By means of this principle of the Unconscious the phenomena in question at once receive their only possible explanation, an explanation which either has not been expressly stated before, or could not obtain recognition, for the simple reason that the principle itself can only be established through a comparison of *all* the relevant phenomena. Moreover, by the application of this as yet undeveloped principle, a prospect opens up of quite novel modes of treating matters hitherto supposed to be perfectly well known. A number of the contrarieties and antinomies of earlier creeds and systems are reconciled by the adoption of a higher point of view, embracing within its scope opposed aspects as incomplete truths. In a word, the principle is shown to be in the highest degree fruitful for special questions. Far more important than this, however, is the way in which the principle of the Unconscious is imperceptibly extended beyond the physical and psychical domains to achieve the solution of problems which, to adopt the common language, would be said to belong to the province of *metaphysics*. These consequences flow so simply and naturally from the application of our principle to physical and pyschological inquiries, that the transition to another department would not be remarked at all, if the subject-matter of those questions were not otherwise familiar to us. There is a general tendency of thought towards this single principle. In each succeeding chapter one piece more of the world *crystallises*, as it were, around this *nucleus*, until, expanded to *all-unity*, it embraces the Cosmos, and at last is suddenly revealed as that which has formed the core of all great philosophies, the Substance of Spinoza, the Absolute Ego of Fichte,

Schelling's Absolute Subject-Object, the Absolute Idea of Plato and Hegel, Schopenhauer's Will, &c.

I beg, therefore, no one to take offence at this notion of unconscious representation if at first it have little positive significance. The positive content of the conception can only be gradually *acquired in the course* of the investigation. Let it at first suffice that an unknown cause of certain processes, outside of and yet not essentially foreign to Consciousness, is thereby signified, receiving the name "idea," because it has in common with what is known in Consciousness an *ideal* content, which itself has no reality, but can at the most resemble an external reality in the ideal image. The notion of unconscious will is clearer in itself, and appears less paradoxical (comp. Chap. A. i. conclusion). As it will be shown in Chap. B. iii. that Feeling can be resolved into Will and Idea, these two being thus the *only* fundamental psychical functions which, according to Chap. A. iii., are inseparably *one*, so far as they are conscious, I designate the united unconscious will and unconscious idea "the Unconscious." Since, however, this unity again only rests upon the identity of the unconsciously willing and unconsciously thinking subject (Chap. C. xv. 4), the expression "the Unconscious" denotes also this identical subject of the unconscious psychical functions,—a something in the main unknown, it is true, but of which we may at least affirm, that *besides* the *negative* attributes "being unconscious and exercising functions unconsciously," it possesses also the essentially positive attributes "willing and representing." As long as our speculation does not transgress the limits of individuality, this may be sufficiently clear. When we, however, view the world as a whole, the expression "the Unconscious" acquires the force not only of an *abstraction* from all unconscious individual functions and subjects, but also of a *collective*, comprehending the foregoing both extensively and inten-

sively. Lastly, it will appear from Chap. C. vii. that all unconscious operations spring *from one same* subject, which has only its phenomenal revelation in the several individuals, so that "the Unconscious" signifies this One Absolute subject. This must suffice as a general indication of our theme.

"Philosophy is the history of philosophy,"—to that I subscribe with all my heart. He, however, who should take this assertion to mean that truth is to be found in the past alone would fall into a very serious error; for there is a dead and a living past in the history of Philosophy, and *life* is only to be found in the *present*. Thus in a tree, the solid stem of dead-wood which defies the storm is formed by the growth of earlier years, and a thin layer alone contains the life of the mighty plant, until in the next year it too is numbered with the dead. It was not the leaves and flowers, which captivated the beholders in bygone summers, that gave enduring strength to the tree,—these at the most contributed, when fallen and faded, to manure its roots,—it was the slight and unregarded annular growth of the stem, and the insignificant young shoots, that increased its girth, height, and solidity. It is not merely strength for which the living ring is debtor to its dead forefathers, but by holding them in its embrace, expansion likewise; wherefore for the newly sprouting ring, as for the tree, the first law is really to embrace and enfold all its predecessors, the second, to grow from the root upwards self-dependently. The problem how to fulfil these two conditions in Philosophy verges on the paradoxical, for they who overlook the situation have usually lost the ingenuousness necessary for making a true beginning, and he, who attempts a new departure, generally presents some crude dilettante product from having insufficiently appreciated the previous historic evolution.

I believe that the principle of the Unconscious, which forms the focus in which all the rays of our inquiry

meet, *when conceived in its generality*, may not improperly be regarded as a new point of view. How far I have succeeded in penetrating into the spirit of the previous development of Philosophy I must leave to the judgment of the reader. I will only remark that, having regard to the plan of the work, the proof, that nearly everything that can be looked upon as genuine heart-wood in the history of Philosophy is embraced in the final results, must be limited to brief hints, which have in part been more elaborated in various special inquiries, to which reference will be made at the proper place.

(*b.*) *Method of Research and Mode of Exposition.*

Three leading methods of research are to be distinguished—the dialectic (Hegelian), the deductive (from above downwards), and the inductive (from below upwards). The dialectic method I must, without now entering upon reasons *pro* or *con*,[1] entirely exclude, for the reason that, at least in the accepted form of it, it is ill-adapted for common comprehension, a feature which cannot here be overlooked. The advocates of that method, who are above all others bound to recognise the relativity of truth, will, it is hoped, not condemn the present work on account of its naturalistic character, especially when they consider the positive stand made against common opponents, and its utility as a propædeutic for non-philosophers. We have then to weigh the comparative advantages of the deductive, or descending, and of the inductive or ascending method.

Man arrives at the scientific stage when he tries to comprehend and explain to himself the totality of the phenomena which surround him. Phenomena are effects whose causes he desires to know. As different causes

[1] My own opinion will be found in a monograph entitled "Ueber die dialektische Methode" (Berlin, 1864, C. Duncker).

may have the same effect (*e.g.*, friction, the galvanic current, and chemical changes, Heat), so, too, a single effect can have different causes. The cause *assumed* for an effect is consequently only a hypothesis, which can by no means possess certainty, but only a probability, to be determined by extraneous considerations.

Let the probability that U_1 is the cause of the phenomenon E be $= u_1$, and the probability that U_2 is the cause of U_1 be $= u_2$, then the probability that U_2 is the remote cause of $E = u_1, u_2$; from which it is clear that at every stage backwards in the chain of causation the coefficients of probability of the several causes in respect of their proximate effects go on multiplying, *i.e.*, become continually smaller (*e.g.*, $\frac{8}{10}$ multiplied by itself nine times becomes about $\frac{1}{10}$.) If the degree of probability of the causes did not again rise through the number of hypothetical causes becoming fewer, and through more effects being explicable by a single cause,[1] the probabilities would soon by continual multiplication reach values so small as to be unserviceable. Now if the causes of all cosmical phenomena could be regressively traced, until they were referred to one or a few ultimate causes or principles, Science, which is one, as the world is one, might attain perfection by way of the inductive method.

Supposing, however, any one to have solved this problem in a more or less complete form, the question still remains, whether, in imparting his convictions to others, he would do better to follow the track from phenomena backwards and upwards to the original causes, or to deduce the existing world from such first principles? We are dealing here with an alternative; for when Schelling in his final system asserts the necessity of a combination of both processes, beginning (see Werke, Abth. ii. Bd. 3, S. 151, Anm.) with a negative ascending philosophy, and concluding with a positive descending

[1] The increase takes place according to the formula developed on pp. 53 and 54.

philosophy, this duplication is only made possible by assigning a distinct sphere to each, and by retaining the former for the purely logical domain. In other words, he applies the inductive method only to facts of *inner* thought-experience (comp. Werke, ii. 1, pp. 321 and 326), whilst in his positive philosophy he seeks to exhibit the highest Idea thus obtained as result as the *really Existent* and the principle of all Being (comp. ii. 3, p. 150), endeavouring to derive therefrom the facts of *outer* experience by means of the deductive method. (Krause's ascending and descending didactic order is somewhat similar.) Even *if* the results thus deductively obtained in any way satisfied the demands of Science, still such an arbitrary separation of inner and outer experience could not be scientifically justified; and in any case, as regards the *latter* province, the *before-mentioned* alternative would again present itself, whether the ascending or descending method be preferable for exposition. The decision must undoubtedly be given in favour of the ascending or inductive method; for—

1. As the person to be guided dwells in the lower region of fact, his proper starting-point is there, and his upward course is always from the known to the unknown. On the other hand, to place him at the outset at the point of view of first principles would necessitate a *salto mortale*, and then he would have to proceed from one unknown point to another, only reaching the known again at the conclusion of his journey.

2. Every one is persuaded that his own opinion is the correct one, and consequently distrusts any novel doctrine. He must, therefore, know *how* another has arrived at his sublime results, if his own distrust is to be removed, and this requires the employment of the ascending method.

3. Men are secretly inclined to distrust their own *understandings*, as well as obstinately to stand by *opinions* once adopted. It is therefore exceedingly difficult to

convince any person by deduction, because he always distrusts the method, even when he has no specific objection to raise; whereas in induction he needs think less strenuously and exactly, but can, as it were, touch the truth by sight and direct perception.

4. Deduction from first principles, supposing it to be absolutely flawless, may perhaps be imposing by its vastness, compactness, and subtlety, but does not produce conviction. For since the same effects can arise from different causes, in the most favourable case deduction only proves the *possibility of these* principles, by no means their necessity; it does not even give them a coefficient of probability, as the inductive method does, never advancing beyond the *bare notion of possibility.* To speak figuratively, it is undoubtedly indifferent, if we want to become acquainted with the Rhine, whether we travel up-stream or down-stream; but for the dweller at the mouth of the Rhine the natural course is up-stream, for if a magician should come and transport him in a twinkling to the source of a certain river, he would be wholly unable to tell if it were really the source of the *Rhine*, and whether he is not about to undertake a long, tedious journey in vain. And when he arrives at this river's mouth, and finds himself in an unfamiliar region instead of in his own home, the wizard perhaps tries to persuade him that it really is his home, and many a one readily credits him for the sake of the beautiful journey itself.

After what has been stated, it would be inexplicable how anybody who had arrived at his principles by the inductive path should take the deductive method for their communication and proof; and, in fact, this never occurs. The truth is, that philosophers who deduce their systems (whether the method be revealed or concealed), have arrived at their principles by the only way save induction which is open to them, viz., by a sort of mystical flight, as will be shown in Chap. B. ix. In their case

deduction is the attempt to descend from the mystically acquired results to the reality to be explained, and that too by a path, which has always possessed a fascination for system-loving minds dazzled by the certainty of the results attained in the very different science of mathematics. For such philosophers deduction is certainly the appropriate method, since their given starting-point is the upper region of thought. Apart from the circumstance that both the method of proof itself as well as the principles to be proved must always, as everything human, be defective, and that accordingly deduction always leaves an unfilled interval between primary principles and the reality to be explained, the worst feature of the case is that *deduction* cannot prove its own principles, as Aristotle long ago showed, in the most favourable case obtaining for them only a bare possibility, but not a definite probability. The principles may perhaps gain somewhat in *comprehensibility* by the process, but no *power of convincing*, and the attainment of a conviction of their correctness is left exclusively to *mystic reproduction*, as their discovery consisted in mystical production. It is the greatest misfortune for Philosophy, so far as it employs this method, that the assurance of the truth of its results is not *communicable* as in the case of inductive science; and even the comprehension of its content, as is well known, is no easy matter, because it is infinitely difficult to pour a mystical conception into an adequately scientific mould. Philosophers, however, only too frequently deceive both themselves and their readers with regard to the mystical origin of their principles, and try, in the absence of good proofs, to give them a scientific support by subtle sophisms, the worthlessness of which escapes notice through the firm belief of the truth of the result. Here is the explanation of the circumstance, that people (save in the rare exception of a certain mental affinity) feel an extreme repugnance to the study of the philosophers, when they turn to their proofs and

deductions, but, on the other hand, are attracted and fascinated in the highest degree by the imposing compactness of their systems, their grand views of the world, their flashes of genius illuminating the darkest recesses, their deep conceptions, their ingenious aperçus, their psychological acumen. It is the mode of proof that inspires the man of science with his instinctive aversion to Philosophy,—an aversion which in our own time, when in every department of life Realism is triumphant over Idealism, has risen to supreme contempt.

It follows further from the deductive method of the philosophers, that discussion can only arise on special points in so far as they follow from principles with respect to which there is no dispute. But now, inasmuch as the whole system is enounced as a consequence of first principles, even supposing all conclusions to be correctly drawn, it can only be accepted or rejected as a whole, according as one rejects or accepts the first principles; whilst in a philosophy of induction which has been built up from below, *i.e.*, on generally admitted and empirically established facts, assent may be granted up to a certain point, and then the observer may go his own road, having gained many hints for future use from a careful study of the solid sub-structure. It is accordingly evident why every deductive system stands more or less alone, like the spider in its web, because all differences are enclosed in the first principles, with regard to which there will never be agreement, if we are bound to make a commencement with them. On the other hand, in the different inductive philosophical systems (which, alas! do not yet exist), a feeling of solidarity would arise through the possession of a common foundation, just as in inductive science in general, where every strictly scientific step, once taken, is always a step gained, and where even the smallest gift is gratefully accepted. Lastly, it is obvious from what has

been said, why the deductive philosophy has never yet succeeded in reaching the majority of the educated, but has had to be contented with a limited public, and why it has been just as little successful in bridging over the vast gulf which *separates* it *from the reality to be explained.*

Those philosophies, on the contrary, where the inductive method has been adopted, and all the natural sciences in the widest sense of the term, have undoubtedly obtained precious results of a secondary kind and gained ground for the future, but still are very far indeed from having reached ultimate principles and the true unity of science.

Thus a chasm yawns between the methods; induction cannot attain to first principles and to system, nor can pure speculation arrive at explanation of the actual or communicate its wisdom. It may be concluded from this that the whole truth cannot be comprehended from one side alone, but that the matter must be approached simultaneously from both sides, and a survey made from opposite stations in order to find out the salient points, where a bridge can be thrown across. For the case is not an entirely hopeless one. Thoughts crystallise both from above and from below, as the mass of melted sulphur coalesces when the most prominent needles interlace, but not before. We have arrived at a point in the history of science where the pioneers meet, like two miners who, in their subterranean galleries, hear each other's knocking through the party-walls. For inductive science has in recent times made such vast progress in all branches of inorganic and organic nature, and even in the region of mind, that attempts of the kind indicated find a very different ground on which to work than, *e.g.*, those of an Aristotle, Paracelsus, Bacon, and Leibniz. On the other hand, however, the period embracing the close of the last and beginning of the present century, brilliant beyond all

former periods, has enriched the speculative mind in so many ways, that both parties once more face each other as equals. But at the same time the world has become more aware of a direct antagonism of method which before was less apparent, and hence it has come to pass that each investigator is wont to declare himself for one of the two tendencies much more definitely than was formerly the case. The present time needs a spokesman who has comprehended both sides with equal love and devotion, who is capable, if not of mystical production, yet of reproduction, and at the same time has made a survey of exact science and appreciates the strictness of the exact inductive method. He should clearly recognise, too, the nature of the problem before him, viz., to combine the speculative (mystically gained) principles with the highest results hitherto attained of inductive science according to inductive method, in order to bridge over the gulf between the two, and to elevate what have hitherto been merely subjective convictions to the rank of objective truths. It was in reference to this great and seasonable problem that I chose the motto, "Speculative results according to inductive scientific method!" Not that I thought myself to possess a mind sufficiently comprehensive for the solution of this problem, or at all believed that I had offered in the present work a satisfactory solution,—that is far from me. If I merit any praise, it is for having distinctly declared a problem, already recognised and attacked in different ways, to be the philosophic problem of a time suffering conspicuously from speculative exhaustion, for resolving to contribute my mite towards its solution, and so giving to others a possibly needed stimulus; but above all, because I have taken up the matter on a side hitherto neglected, but rich in promise beyond all others.[1] At the same time

[1] The astonishingly favourable reception, which the previous editions of this work have met with, seems to me to be essentially due to a recognition of the seasonableness of my efforts.

my design imposes upon me the duty of submitting myself to the judgment of both tribunals, the scientific as well as the philosophical.[1] Gladly do I do this, however; for I hold all speculation to be baseless, which contradicts the clear results of empirical investigation, and conversely hold all conceptions and interpretations of empirical facts to be erroneous, which contradict the strict results of a purely logical speculation.

I may perhaps be allowed to say also a few words upon the mode of exposition. My first rule has been general intelligibility and brevity. The reader will accordingly find no citations except such as could be worked into the text; all polemic has been avoided as far as possible, unless it was indispensable for the elucidation of a conception. My trust is greater in the convincing power of what positive truth there may be contained in my work than in negative criticism, however incisive. Further, instead of dwelling upon the errors and weaknesses of great men, which receive

[1] The criticisms and replies, whether *philosophical* or *scientific*, which have come under my notice, have not succeeded in shaking my opinions on any material point, but have rather strengthened them in several instances. In the Addenda to the earlier editions I sought as much as possible to avoid polemics, and allowed myself for the first time in the Appendix to the seventh edition somewhat greater liberty in this respect. I have permitted myself more freedom in respect to controversy in some minor writings. A fuller treatment of strictly scientific questions will be found in "Truth and Error in Darwinism," and "Contributions to a Philosophy of Nature" (Section C. of "Gesammelte Studien und Aufsätze gemeinverständlichen Inhalts"), as well as in the Appendix to the present volume, "On the Physiology of the Nerve-Centres." My place in the historical development of philosophy is indicated in "Das philosophische Dreigestirn des 19. Jahrhunderts" (Section D. of the "Ges. Studien u. Aufsätze"), and the "Elucidations of the Metaphysic of the Unconscious." The following writings give a clue to my position in respect to the problems of the theory of knowledge and methodology:—"Kritische Grundlegung des transcendentalen Realismus," 2d ed.; "J. H. v. Kirchmann's erkenntnisstheoretischer Realismus" and "Ueber die dialektische Methode." On the religious questions of the present-day I have expressed my opinions in the tractate "Die Selbstzersetzung des Christenthums und die Religion der Zukunft," 2d ed., and a few excursuses in the field of Æsthetics are to be found in "Aesthethische Studien" (Section B. of the "Gesammelte Studien und Aufsätze").

sentence in being forgotten in course of time, I have preferred to render prominent their grandest ideas, where they presagingly foreshadow in vague outline what only the future can establish in complete detail. Further, the opportunity for interesting side-remarks, for more thorough but prolix proofs, detailed deductions, &c., has often been left unused, so as to avoid a lengthened treatment, which would be serviceable to but a few readers. Accordingly, in the majority of instances, with the exception of those which deal with fundamentals, the chapters are almost aphoristic, because I believe that most readers will prefer a short exposition affording stimulus to self-reflection to an exhaustive treatment of the subject. In the handling of the topics the reader's convenience has also been considered as far as possible, in that each chapter forms a little treatise by itself on a limited subject (a few only making an exception to this which belong inseparably together, as, *e.g.*, Chap. C. vi. and vii.) The chapters of the first two sections *together* and *severally* prove the existence of the Unconscious; their concord and demonstrative force is a source of mutual *support*, and they *sustain* each other reciprocally like a pile of arms; thus the later support the earlier. I therefore beg the reader kindly to reserve his judgment, at least until he has finished Section A. Should, however, the proof of this or that chapter appear to be faulty, the inferences of the others are not necessarily thereby condemned, just as one or many of the weapons may be taken from a pyramid of piled arms without its collapsing. Lastly, I crave indulgence so far as the several physiological and zoological facts employed as examples are concerned, in respect to which a layman may easily make a slip, without, however, prejudicing the main argument.

(c.) *Predecessors in respect of the Conception of the Unconscious.*

What a time elapsed before in the history of Philosophy the antithesis of Spirit and Nature, Thought and Being, Subject and Object, emerged into clear consciousness, an antithesis which now governs all our thinking! For the primitive man as natural existence felt his body and soul to be one, he instinctively anticipated this identity, and his understanding must have reached a high degree of consciousness, before he could so far free himself from this instinct as to perceive the full force of the contrast. Nowhere in all Greek philosophy do we find this opposition clearly expressed, still less its significance recognised, but least of all in the classical period. If this holds good of the opposition of the Real and the Ideal, ought we to be surprised that the contrast of the Unconscious and the Conscious should still less occur to the primitive understanding, and therefore should arise much later in the history of Philosophy; nay, that at this very day most educated people hold it to be absurd to speak of unconscious thinking? For the Unconscious is so much *terra incognita* to the natural consciousness, that it regards the identity of *having an idea* and *being conscious of a thing* as quite self-evident and indubitable. This *naïve* point of view was taken by Descartes (Prin. Phil., i. 9), and still more decidedly by Locke (Essay on the Human Understanding; book ii. chap. 1, sec. 9): "To ask at what time a man has any ideas is to ask when he begins to perceive, having Ideas and Perception being the same thing;" or sec. 19: "For it is altogether as intelligible to say that a body is extended without parts, as that anything thinks without being conscious of it. They who talk thus may, with as much reason, if it be necessary to their hypothesis, say that a man is always hungry, but that he does not always feel it; whereas hunger consists in that very sensation, as think-

ing consists in being conscious that one thinks." It is clear that Locke *postulates* these propositions in all simplicity. The assertion, repeatedly made, that Locke has *proved* the possibility of unconscious ideas is therefore quite *incorrect*. He only proves from a proposition taken for granted, that the *mind* can have no idea without the *man* being conscious thereof, because otherwise the consciousness of the man and that of the mind would constitute two different persons, and that consequently the Cartesians were wrong in asserting that the soul, as thinking being, must think incessantly. Locke is accordingly the first and only one to give full and scientific expression to this tacit supposition of the *naive* understanding. By this step, however, an opportunity was naturally afforded Locke's great opponent, Leibniz, of perceiving its one-sidedness and untruth, and of making the discovery of unconscious ideas, whereas all earlier philosophers silently inclined to the one or the other view, but in general failed to distinctly envisage the problem.

Leibniz was led to his discovery through the endeavour to save innate ideas and the ceaseless activity of the perceptive faculty. For when Locke had proved that the *soul* cannot consciously think if the *man* is not conscious thereof, and yet *should* be always thinking, there remained nothing for it but to assume an *unconscious* thinking. He therefore distinguishes *perception*, ideation, and *apperception*, conscious ideation or simply consciousness (Monadologie, sec. 14), and says: "Il ne s'en suit pas de ce qu'on ne s'apperçoit pas de la pensée, qu'elle cesse pour cela" (Nouveaux Essais sur l'Entendement Humain, book ii. chap. 1, sec. 10). What Leibniz contributes to the positive establishment of his new conception is certainly very scanty, but he deserves immense credit for instantly perceiving with the eye of genius the range of his discovery, for penetrating (sec. 15) into the dark inner laboratory of human feelings, passions, and actions, and for recognising habit and much else as effects

of an important principle only too briefly expounded. He declares unconscious ideas to be the bond "which unites every being with all the rest of the universe," and explains by their means the pre-established harmony of the monads, in that every monad as microcosm unconsciously represents the macrocosm and its position therein. I cheerfully confess that it was the study of Leibniz which first incited me to the present investigation.

With regard to the so-called innate ideas, he likewise finds a point of view which has obtained general acceptance (book i. chap. 3, sec. 20): "They are nothing but natural aptitudes, that is to say, active and passive dispositions;" (chap. 1, sec. 25): "Actual knowledge is certainly not innate, but only what one may call virtual knowledge, just as the figure outlined by the veins of the marble is in the marble before these are discovered in the process of working them." Leibniz meant to say what Schelling later (Works, div. i. vol. iii. pp. 528, 529) more precisely expressed in the words: "So far as the Ego produces everything out of itself, so far is all . . . knowledge *à priori*. But in so far as we are not conscious of this productivity, so far is there nothing in us *à priori*, but everything is *à posteriori*. . . . There are thus notions *à priori* without there being innate notions. Not conceptions, but our own nature and its whole mechanism is that which is innate to us. . . . In that we place the origin of the so-called notions *à priori* outside the sphere of consciousness, *where for us also the objective world takes its rise*, we assert with the same evidence, and with equal right, that our knowledge is in origin out-and-out empirical and entirely *à priori*."

But now comes the weak side of Leibniz's theory of unconscious ideas, already apparent in their usual name, "*petites perceptions*." Having in his discovery of the infinitesimal calculus, and in many parts of Natural Philosophy, in Mechanics (Rest and Motion), in the Law of Continuity, &c., introduced with the most brilliant success

the notion of the (so-called mathematical) infinitely little, Leibniz was tempted to conceive the *petites perceptions* as ideas of too low an intensity to affect consciousness. He thereby destroyed with one hand what he seemed to have built up with the other—the true notion of the Unconscious as a province opposed to Consciousness, and its significance for feeling and action. For if, as Leibniz himself maintains, natural disposition, instinct, the passions—in short, the mightiest influences in human life—take their rise in the sphere of the Unconscious, how are they to be shaped by ideas which are withdrawn from consciousness simply on account of their weakness? Would not the more *powerful* conscious ideas *prevail* at the decisive moment? This, however, is of minor interest to Leibniz, and for the main objects of his consideration, innate ideas and the constant activity of the soul, his assumption of the infinitely little consciousness certainly suffices. Accordingly, most of his examples of *petites perceptions* have reference to ideas of a low degree of consciousness, *e.g.*, sensuous perception during sleep. For all that, Leibniz retains the glory of having been the first to affirm the existence of ideas of which we are not conscious, and to recognise their vast importance.

Nearer to Leibniz than is commonly thought stands Hume, whose theoretical philosophy, it is true, is almost limited to a single point, Causality, but who within that limited sphere has looked round him with a clearer and bolder eye than even Kant. Hume does not dispute the fact of Causality, he only opposes the empiricists (Locke) with respect to its abstraction from experience, the *à priorists* (Cartesians) with respect to its apodictic certainty. On the other hand, he concedes to the empiricists the applicability of Causality to experience and practical affairs, and the *à priorists* through his indirect proof of the principle affords a support for the assertion, that our thinking and inferring according to causal relations is a manifestation *unconsciously to ourselves* of an *instinctive*

power far removed from our discursive thinking, which, like the astonishing instinct of animals, must be looked upon as an original gift of nature ("Inquiry Concerning Human Understanding"). The reality of an objectively real world, independent of the perception of the subject, is immediately inferred from sensuous perception by means of such a natural, blind, but powerful *instinct*. As, however, we directly know only our own mental representation, it is certainly directly indemonstrable, that it is the *effect* of an external object different from, but resembling it. In his acute criticism of the Berkeleian Idealism, Hume, however, shows himself so thoroughly penetrated by the consciousness, that every subjective idealism carried out to its last consequence can only end in a scepticism absolutely infertile and practically repudiated by its champions, that he is protected from the Kantian error of an exclusively subjective conception of causality; and at the conclusion of his inquiries he advocates the *hypothetical restitution* of the critically purified causal instinct as the only justifiable point of view. (I have taken a similar course in my work, "Das Ding an sich und seine Beschaffenheit," C. Duncker, 1871.)

That Kant borrowed the notion of unconscious ideation from Leibniz is easily to be detected from the passage quoted at the beginning of this treatise. That he also attributed great importance to the subject is proved by the following passage of sec. 5 of the "Anthropology:"— "Innumerable are the sensations and perceptions whereof we are not conscious, although we must undoubtedly conclude that, we have them, obscure ideas as they may be called (to be found in animals as well as in man). The clear ideas, indeed, are but an infinitely small fraction of these same exposed to consciousness. That only a few spots on the great chart of our minds are illuminated may well fill us with amazement in contemplating this nature of ours." If Kant in this passage identifies the *unconscious* and the *obscure* ideas for the purposes of his

"Anthropology," the "Critique of the Pure Reason" shows that he recognised and indicated the distinction, but did not comprehend its full importance. The *clear* is opposed to the obscure, the *conscious* to the unconscious idea; but not every conscious idea is a clear idea, nor is every obscure idea unconscious. Only that conscious idea is clear in which the consciousness reaches to the *consciousness of the discrimination* of that very idea from others: when consciousness is not adequate to that, the conscious idea is obscure. *Not all* obscure ideas are therefore unconscious; "for a certain degree of consciousness, which, however, does not suffice for memory, is not wanting in *several* obscure ideas" (Kant's Werke ed. Rosenkranz, ii. p. 793, Obs.) If for the practical ends of anthropology the contrast of clear and obscure ideas seems to Kant to be sufficient, for the theory of knowledge in general it yields in importance to that of the conscious and unconscious idea. "Idea is the genus (*repraesentatio*). *Under it* falls the idea accompanied by consciousness (*perceptio*)" (ibid., ii. 258). Consciousness, whose presence distinguishes *perceptio* from the unperceived *repraesentatio*, is not so much itself idea, "but its *form* in general, so far as it can be called *knowledge*" (ii. 279). It is the absence of this *form* which distinguishes the unconscious from the conscious idea. According to Kant the pure concepts of the understanding (*categories*) seem to belong to the unconscious ideas, so far as they lie beyond cognition, which cognition only becomes possible through a *blind* function of the soul (ii. 77) spontaneously binding up the given manifold of the perceived ideal material into a synthesis (ii. 76). If we penetrate by the aid of consciousness into the nature of this synthesis, we certainly recognise therein, so far as it is generally presented, the pure concept of the understanding (ii. 77); but the part that the unconscious category as "germ or foundation" (ii. 66) plays in bringing about conscious knowledge (the "Schematism of the pure understanding")

remains an "art hidden in the depths of the soul," hardly ever to be laid bare (ii. 125). Unfortunately Kant did not attain the same degree of insight in reference to the *à priori* forms of intuition as in the case of the forms of thought. One example of the rare keenness of his perception, however, may be mentioned. Kant was the first who sought in the Unconscious for the essence of sexual love (Anthropology, sec. 5).

Kant's glances beyond the sphere of conscious human knowledge extend, however, still further than we have hitherto shown; but he himself touched this other province only in the way of suggestion, because his philosophic goal was always apodictic certainty, and he was obliged to confess that in this department our knowledge rests only on probability, *i.e.*, according to his terminology, is problematical (ii. 211). The above-mentioned classification of ideas is incomplete in so far as the second species, opposed to the conscious idea, is unnamed. This is, however, according to Kant's terminology, the "intellectual intuition," which does not appear in the classification. The conscious presentation (perception) further falls, according to Kant, into (subjective) feeling and (objective) knowledge, and the latter again into intuition and conception. Feeling and intuition are not intellectual, but sensuous; conception is not intuitive, but discursive; sensuous intuition is derived intuition, not original as the intellectual (ii. 720); discursive knowledge, again, effected by the mediation of the categories, is, it is true, intellectual, but not intuitive (ii. 211). Intellectual intuition[1] is accordingly left for the non-perceived idea. The perceived or conscious idea is different from its object; the non-perceived idea is one with it, in that it itself gives

[1] Spinoza also has, besides cognition through sense-perception and abstract conception, a third kind of cognition by way of intellectual intuition or intuitive knowledge (Ethics, part ii. prop. 40, obs. 2). This has the mind, so far as it is eternal, not the finite and perishable individual mind (part v. prop. 31), for its formal cause, and it alone furnishes really adequate ideas on the nature of God and of things.

it or produces it (ii. 741, 742). It is not the derived and dependent human understanding (conscious intellect) as such which possesses such an intellectual intuition, but only the primordial Being (ii. 720) or the divine understanding (ii. 741), for which the production of its "intelligible objects" is at the same time the creation of the world of noumena (viii. 234). Whether, and how far, the obscure ideas without any consciousness are to be explained by the penetration of the original intellectual intuition of the primordial Being into the derived human understanding, are points on which Kant never expressed himself: Schelling was the first energetically to pursue that line of inquiry. It is interesting, however, to see, how Heinrich Heine adopted the Kantian notion of intellectual intuition to explain the mysterious lightning-flashes of genius (comp. Heine's Works, vol. i. pp. 142, and 168, 169).

Although Kant had by no means intended to enounce a metaphysic proper, still he had pretty plainly foreshadowed the only metaphysic possible in a system of pure reason in the above-mentioned intellectual intuition of the Absolute which produces the intelligible world, so that his immediate continuator, Fichte, could only proceed further on the path indicated. According to the latter, "God's *existence*" is "merely *knowledge itself*" (Fichte's Werke, ii. pp. 129, 130), *substantial* knowledge only however, to which, as infinite, *consciousness* can *never* be ascribed. Without doubt it is *necessary* for knowledge to *become* self-consciousness, but with equal necessity is it thereby *riven* into the plural consciousness of manifold individuals and persons (vii. 130, 132). As substantial knowledge (*i.e.*, as mere content of knowledge without the form of consciousness), God is *the infinite Reason* in which the finite is contained; he is likewise the infinite Will which supports and retains all individual wills in their spheres, and the medium of their communication (ii. 301, 302). If it be necessary to deny consciousness to

the Unity of the infinite Reason and the infinite Will, in spite of its absolute infinite knowledge, or rather precisely on that account, still more must personality, the very conception of which implies limitation, be refused (ii. 334, 335). It is clear from this that all the elements of the Unconscious are to be found in Fichte, but they appear only casually, as vague hints scattered here and there, and these promising thought-blossoms were soon buried under later growths without having borne any fruit.

The conception of the Unconscious was much more closely related to the *Faith Philosophy* (Hamann, Herder, and Jacobi), which properly rests upon it; but that philosophy was so obscure and incapable of rationally comprehending its own basis, that it never got so far as to discover its proper cue.

On the other hand, we find in Schelling the conception of the Unconscious in its full purity, clearness, and depth; it is worth while therefore to glance aside for a moment to observe the way in which he arrived at it. The following passage throws most light on the subject (Schelling's Werke, div. i. vol. x. pp. 92, 93): "The meaning of this (the Fichtean) subjective Idealism could not be that the Ego *freely* and *voluntarily* posited the world of things, for far otherwise would the Ego will if upon it depended external existence. . . . But all this gave Fichte no concern. . . . It falling now to my lot to take up the Problem of Philosophy at the point where Fichte had left it, I had above all to see how that undeniable and inevitable necessity" (with which its representations of the external world confront the Ego), "which Fichte only seeks as it were to scold away with words, could be united with the Fichtean notions, with the asserted absolute substance of the Ego. It soon became clear that the external world is certainly only here *for* me, so far as I myself am here and conscious to myself (that is self-evident), but

that also conversely, in the act of self-presentation, I am *conscious* that, along with the revealed *I* am, I find also the world already—there—existing, that thus in no case does the *already conscious* Ego produce the world. Nothing, however, prevented the receding with this *now* self-conscious Ego to a moment *when it was not yet conscious of itself*, and the assuming a region beyond the present consciousness, and an activity which no longer *itself*, but *only* through its *result*, comes into consciousness." (Cf. also Schelling's Werke, Abth. i. Bd. 3, S. 348, 349.) The circumstance, that Schelling had to derive the notion of the Unconscious from the hypothesis of the Fichtean Idealism, is probably the reason why his many fine observations concerning this conception exerted so little influence on the culture of his time, since the latter needed an empirical derivation in order to perceive its necessity. Besides the passage previously quoted when speaking of Leibniz other citations will be made from Schelling in the course of our inquiries. At this point I must content myself with transcribing the following suggestive remark (Werke, i. 3, p. 624):—"In all, even the commonest and most everyday production, there co-operates, with the conscious an unconscious activity." The working out of this principle in the different departments of empirical psychology would have supplied an *à posteriori* foundation for the notion of the Unconscious. Schelling, however (except in the case of æsthetic production), not only failed to do this, but he even asserts elsewhere (Werke, i. 3, p. 349): "The æsthetic *alone* is such an activity" (one at the same time conscious and unconscious).

Nevertheless, with what purity and depth Schelling in his original thinking had seized the notion of the Unconscious is proved by the following important passage (i. 3, p. 600): "*This eternally Unconscious*, which, as were it the *eternal sun in the kingdom of spirits*, is hidden by its own untroubled light, and although itself never becoming

Object, impresses its identity on all free actions, is withal *the same* for all intelligents, the invisible root of which all intelligencies are only the powers, and the eternal mediator between the self-determining subjective in us and the objective or intuited, at once the ground of conformity to law in freedom, and of freedom in conformity to law." He denotes by this mode of expression what Fichte named the substantial Knowledge without consciousness, or the impersonal God as Unity of infinite Reason and infinite Will, a unity embracing the many individual wills with their finite reason. Schelling too went so far as in 1801 to fix upon the *absolute Reason* as the first and highest principle of his Philosophy of Identity, and therewith to give a concrete realisation to his "eternally Unconscious," to which in the year 1809 he added the *Will* as a principle of even higher importance (i. 7, 350).

As in the course of Schelling's historical development the Idealism of Fichte retreated into the background, so did the conception of the Unconscious experience the same fate. Whilst in the Transcendental Idealism it plays a leading part, in the writings which appeared soon after it is hardly even mentioned, and later still it disappears almost entirely. The mystical Philosophy of Nature also of Schelling's school, which (especially Schubert) is so much occupied with the sphere of the Unconscious, has, so far as I know, nowhere concerned itself with a development and examination of this conception. Far better did the divining poet-mind of Jean Paul Friedrich *Richter* know how to appreciate Schelling's Unconscious, and we quote the following passages from his last, unfinished work "Selina:" "Our measurements of the rich territory of the Me are far too small or narrow when we omit the immense realm of the *Unconscious*, this real interior Africa in every sense. In every second only a few illuminated mountain-tops of the whole wide globe of memory are turned towards the mind, and all

the rest of the world remains in shadow." "Nothing is left for the receptacle and throne of the vital energies but the great kingdom of the *Unconscious* in the soul itself." "In the case of certain men we immediately survey the whole cultivated soul, even to the borderland marked by emptiness and sterility; but the kingdom of the *Unconscious*, at once a kingdom of the unfathomable and the immeasurable, which possesses and rules every human mind, makes the barren rich and pushes back their boundaries into the invisible." "Is it not a consolatory thought, this concealed wealth in our soul? May we not hope that we perhaps *unconsciously* love God more heartily than we know, and that a calm instinct for the second world works in us, while we yet consciously give ourselves up so entirely to the external one?" "We see indeed daily how the conscious becomes the *unconscious*, how the soul without consciousness guides the fingers according to the laws of harmony, whilst it incites consciousness to new relations and actions. When we behold the complicated relations of muscle and nerve, we are astonished at contractions and pressures of the most delicate kind without conscious volition."

In *Hegel*, just as in Schelling's later works, the notion of the Unconscious does not clearly appear, except in the introduction to the lectures on the "Philosophy of History," where he reproduces the ideas of Schelling on this subject, quoted below in Chap. B. x. Nevertheless Hegel's absolute IDEA, in its pure selfhood, before its unfolding into Nature, thus also before its return to itself as Spirit, in that condition in which it is the unveiled Truth, the Godhead, as it were, in its eternal essence before the creation of the world and a finite mind, thoroughly agrees with Schelling's "eternally Unconscious," if it is also only one aspect of the same, viz., the logical or the ideational, coincident with Fichte's "substantial knowledge," and his infinite Reason devoid of consciousness. With Hegel, too, Thought only attains to consciousness when, through the

mean of its externalisation into Nature, it passes from mere being-in-self to being-for-self, and having become an object to itself, has come to itself as *spirit.* The Hegelian God as starting-point is at first being *per se* and unconscious, only God as result is being "for-self" and conscious, is Spirit. That the attaining-to-being-for-self, the becoming-an-object to self is really a coming-to-consciousness, is clearly expressed by Hegel in vol. xiii. *pp.* 33 and 46 of his collected works. The theory of the Unconscious is the necessary, if also hitherto for the most part only tacit *presupposition* of every objective or absolute *Idealism*, which is not unambiguously Theism. Every metaphysic which looks upon the IDEA as the prius of Nature (from which again the subjective mind arises) *must* think the IDEA as *unconscious*, so long as it is still plastic and has not yet emerged from its being before and in Nature into intuitive consciousness in the subjective mind,—unless the shaping IDEA take the form of the conscious thought of a self-conscious God. As highest form of absolute Idealism, *Hegelianism* most certainly has to yield to this necessity, since its IDEA is something very different from the conscious thought of an originally self-conscious God; rather "God" is only a convenient name for the (self-unfolding) IDEA.

It may be said, therefore, that the theme of the present book is mainly the elevation of Hegel's unconscious Philosophy of the Unconscious into a conscious one (cf. my essay, "Ueber die nothwendige Umbildung der Hegel'schen Philosophie aus ihrem Grundprincip heraus," in the "Gesammelte philosoph. Abhandlungen," No. II., Berlin, C. Duncker). But also all those who, influenced more or less by Plato and Hegel, generally assume only IDEAS as the moulding principles of Nature and History, and a guiding objective Reason revealing itself in the world-process, without being willing to confess to a self-conscious God-creator, all these are already unconscious adherents of the Philosophy of the Unconscious.

The task of an author of the same way of thinking, when addressing sympathetic readers, can have no other object than to show what consequences flow from the principles they have adopted, and to confirm them in their opinions by the most cogent reasoning.

Schopenhauer acknowledges as metaphysical principle only the Will, whilst Ideation is, according to him, a cerebral product in a materialistic sense—an assertion not made clearer by the explanation that the matter of the brain is merely the visibility of a (blind, that is unthinking) Will. The Will, the sole *metaphysical* principle of Schopenhauer, is therefore, of course, an *unconscious* Will. Thought, on the other hand, which with him is only the phenomenon of a metaphysical principle, and therefore, *as* thought, not itself metaphysical, can, even where it is unconscious, never be comparable with the unconscious Idea of Schelling, which I myself *place by the side* of unconscious Will, as *metaphysical* principle *of equal value.* But also, apart from this distinction of the metaphysical and phenomenal, the " unconscious rumination," of which Schopenhauer speaks in two passages, which are in perfect accord (W. a. W. u. V. 3, Aufl. ii. S. 148, and Parerga-2 Aufl. S. 59), and which he assigns to the interior of the brain, refers indeed only to the obscure and confused ideas of Leibniz and Kant—ideas which are too weakly illuminated by the light of consciousness to stand out clearly, which are thus merely below the threshold of distinct consciousness, and are differentiated from the clearly conscious ideas *only in degree* (not essentially). Schopenhauer thus gets no nearer the true conception of the absolutely unconscious idea, in these two aperçus (which for the rest have had no influence on his philosophy) than in another place, where he speaks of the separate consciousness of subordinate nerve-centres in the organism (W. a. W. u. V., ii. 291). An opening for the true, absolutely unconscious idea is certainly afforded by the system of Schopenhauer, but only at the point

where it becomes faithless to itself and self-contradictory, when the *Idea*, which is originally only another kind of intuition of the cerebral intellect, becomes a metaphysical entity, preceding and conditioning real individuation (cf. the essay, "Ueber die nothwendige Umbildung der Schopenhauer'schen Philosophie aus ihrem Grundprincip heraus," in my "Gesammelte philosophische Abhandlungen," No. III., Berlin, C. Duncker, 1872). Schopenhauer himself, however, shows no apprehension of this, so that, for example, it does not occur to him to bring forward the IDEA to explain the adaptation of means to ends in Nature, which rather in genuine idealistic fashion he regards as a merely subjective appearance, arising through the disruption of the One Reality into the co-existence and succession of Space and Time, whereby essential unity is revealed in the form of a teleological relation essentially non-existent, so that it would be to turn things upside down to seek *Reason* in the purposive activity of Nature. But in this he altogether fails to perceive that the unconscious Will of Nature *eo ipso* presupposes an unconscious Idea as goal, content, or object of itself, without which it would be empty, indefinite, and objectless. Accordingly, in the acute and instructive observations on instinct, sexual love, life of the species, &c., the unconscious Will comports itself precisely *as if* it were bound up with unconscious representation, without Schopenhauer knowing or admitting it. To be sure Schopenhauer, who as all philosophers and human nature generally in mature life imperceptibly gravitated more and more from Idealism to Realism, secretly felt a certain compulsion to take the step which Schelling long ago had taken beyond Fichte, the step from subjective to objective Idealism; but he himself could not summon up sufficient courage to disavow decidedly the standpoint of his youth (in particular, the first book of his chief work), and left this task to his disciples (Frauenstädt, Bahnsen). Accordingly we only find

a few hints, which, carried further, would have changed the whole character of his system, *e.g.*, the passage "Parerga," 2d edit. ii. 291 (to which Freiherr du Prel has referred in Cotba's "Deutscher Vierteljahrsschrift," No. 129), where he suggests the possibility, that after death a higher form of the incognitive consciousness might be added to the "intrinsically incognitive Will," devoid of the contrast of subject and object. But now every consciousness is *eo ipso* consciousness of an object with more or less clearly conscious reference to the correlative notion of subject, therefore a *consciousness* in which this opposition ceases is inconceivable; but an *unconscious cognition* without this object were conceivable, and Schopenhauer very nearly approached it in his description of the intuitive idea (W. a. W. u. V., i. § 34; cf. also my above-named essay). It must therefore be granted that Schopenhauer divined the truth, but gave it a faulty expression, and thereby was prevented from inserting this conception in his system in its only possible place. His odious prejudice against Schelling alone hindered him from finding in that writer the very thing he wanted, and that which in the passage alluded to he vainly struggles to obtain.

Only after these citations from European philosophers do I venture to refer to the Oriental philosophy, particularly that of the Vedas. As it is characteristic of the Oriental mind to be less systematic in its thinking but quicker in divining the occult, and to be more open to the slight whispers of genius, there are in the philosophical systems of the Hindoos and the Chinese yet unlifted treasures, in which we are often surprised to find anticipated the results of many thousand years of Western development. In the philosophy of the Vedas the Absolute is called Brahma, and has the three attributes Sat (being, substantiality), C'it (absolute unconscious knowledge), and Ananda (intellectual rapture). As absolute Knowingness, Brahma is called C'aitanja (Scho-

penhauer's eternal Eye of the world, absolute subject of knowledge, at the same time intelligible Ego of all percipient individuals, Kūtastà-Gīva Saksin). The identity of the real and the ideal is most emphatically asserted; for if the ideal were not the real, it would be unreal, and if the real were not the ideal, it would be degraded to dead matter without sustaining force (Graul, Tamulische Bibliothek, vol. i. p. 78, No. 141). "*There is no distinction of knower, knowledge, and knowable in the highest mind,* (rather) this (Brahma) is illuminated by itself in virtue of its own essence, which is spirit and bliss" (ibid., p. 188, No. 40). "*Teacher.*—That purely spiritual C'aitanja perceives all bodies. Since, however, he is not himself body, he is also perceived in nothing. *Pupil.*—If he, although knowledge, *is yet cognised by nothing,* how can he *be knowledge? Teacher.*—The syrup-juice also does not bring itself into experience, yet in virtue of the senses different from that juice which perceive it, we say that it is of a sweet nature. So one cannot doubt that knowledge belongs to the self which perceives all things (as its substance). *Pupil.*—Is then Brahma a somewhat that is perceived or that is not perceived? *Teacher.*—Neither. That which lies beyond (above these two categories) (substantial knowledge), that is Brahma. *Pupil.*—How then can we perceive it? *Teacher.*—That is just as if somebody should say: Have I speech or not? *Although thy essence be knowledge,* dost thou yet ask: How is knowledge? Art thou not ashamed?" (ibid., p. 148, No. 2). Absolute knowledge is, according to this, neither conscious of itself (because then without distinction of subject and object), nor immediately conscious to another, because it lies beyond the sphere of the directly discernible. Still it is existentially cognisable by us, because in all knowledge it is that which knows, in all perception that which perceives, and is even intrinsically cognoscible, if only negatively (according to the foregoing examination), as

un-conscious and un-limited knowledge. The Unconscious has, in fact, been as clearly and exactly characterised in this old Indian book of the Vedanta philosophy (Pañcadaśa-prakarana) as by any of the latest European thinkers.

Returning now to the latter, we may cite Herbart, who understands by "non-conscious ideas" such "as are *in consciousness* without our being aware of them" (Werke, v. p. 342), *i.e.*, without our "observing them to be ours and referring them to the Ego," or, in other words, without connecting them with *self-consciousness*. There is no danger of this conception being confounded with the true Unconscious; but there is another notion of Herbart's which must be noticed on account of the application of it by Fechner, viz., that "of ideas below the threshold of consciousness," which only stand for an *endeavour* after representation more or less removed from realisation, but themselves are "by no means actual representation," rather signify for consciousness less than nothing, "an impossible quantity" (Herbart, Works, v. pp. 339–342). Herbart arrives at this rather puzzling conception through his desire to retain, in the spirit of Leibniz, a gradual continuity in the passage from actual ideas to the slumbering ideas of memory, and conversely, as well as the possibility of a reciprocal action of these slumbering ideas, without condescending to a materialistic mode of explanation of these processes, in the sense of seeing in them only material cerebral processes of a strength insufficient for excitation of consciousness.

But now, at the present stage of science, it is not difficult to see that the so-called slumbering ideas of memory are not ideas *in actu*, in activity, but merely *dispositions* of the brain facilitating the revival of ideas. As a string, when caused to sound by aerial vibrations, always yields the same note, the note A or C, for instance, if it be attuned to A or C; so does one or another idea arise more easily in the brain, according as the distribution

and tension of the cerebral molecules induces a more ready response with one or another kind of vibrations on an appropriate stimulus. And just as the string does not respond merely to homologous vibrations, but also to those which only slightly differ from or are simply related to its own; so the vibrations of the predisposed molecules of a cerebral cell are not aroused merely by *one* kind of vibratory impulse, but also by stimuli slightly disproportional or harmonically related to the predisposition (a connection discernible in the laws of association of ideas). What tuning is to the string, is the permanent change, which a vivid idea leaves behind it in distribution and tension of the molecules, to the brain. Although these cerebral predispositions are of the highest importance, since the quality of the feeling with which the mind reacts depends on the form of the brain-waves, (on the one hand all *memory* depending on them, and on the other the *character* of the individual being essentially conditioned by the sum of the various inherited predispositions—cf. Chap. C. x.), still such an arrangement of passive material molecules, favouring the genesis of certain ideas, cannot be termed *Ideation*, albeit it may, according to circumstances, co-operate as condition in the production of an idea, and, indeed, of a conscious idea. But now, as the endless continuance of vibrations once excited in the brain is out of the question, (for the powerful resistances there encountered must put an end to every movement in a finite, and indeed tolerably brief time), Herbart's unconscious condition of the idea could only obtain within the limits, which are fixed on the one hand by the cessation of movement, and on the other by the cessation of conscious representation with unarrested movement of the cerebral vibrations, supposing the two limits not to coincide. The question then is: (1.) Do *all* degrees of intensity of cerebral vibrations give rise to ideation, or does ideation only commence when a certain degree of intensity is reached? and (2.) Is a *conscious* mental state

excited by cerebral vibrations of any intensity, or only by those of a certain strength?

Fechner has approached these questions in his celebrated work "Psychophysik." His train of thought is as follows: It is not every sensuous stimulus that causes sensation, but only a stimulus of a certain amount, which is called the *threshold of stimulation; e.g.*, a sounding bell is heard only at a certain distance. If several homogeneous stimuli, imperceptible when taken singly, are added together, there arises conscious sensation, as in the case of several distant bells sounding simultaneously which would not be separately heard, or the rustling of the leaves in the forest. It might be suggested that the stimulus below the threshold produces no sensation, for the simple reason that it is not strong enough to overcome the resistance offered in the sense-organ and nerves as far as the central organ, but that the mind reacts with the appropriate sensation on the smallest stimulus when the latter has reached the centre itself. This assumption alone, however, is not sufficient, since it does not fit the case of *differential* sensation. For homogeneous stimuli, when varying in intensity, arouse different sensations; but here, too, the variations must exceed a certain degree (the threshold of differential stimulation), if the sensations are to be perceived as different. Here clearly the resistances of the nerve-fibres cannot be made responsible for the phenomenon, since *each* of the sensations is large enough to overcome them. On the other hand, different principles cannot be set up for the threshold of simple stimulation and the threshold of differential stimulation, since the first is *reducible* to the second case, when in the latter one stimulus = 0. Consequently there only remains the assumption that the vibrations *at the centre* must exceed a certain degree before feeling ensues. What here holds good for sensation holds of course for every other mental state, and thus the second question is decided. It remains to ascertain whether the stimuli below the

threshold cause the mind to react *at all*, the result being unconscious sensation or idea, or whether the mind's reaction only begins at the threshold.

Let us hear Fechner further. The so-called Law of Weber runs, "Constant differences in the intensities of homogeneous sensations correspond to constant quotients of their respective stimuli;" and the highly ingenious formula hence derived by Fechner is $\gamma = k \log \frac{\beta}{b}$, where γ is the sensation following on the stimulus β, b the threshold of stimulation, *i.e.*, the value of the stimulus, which being exceeded γ exceeds the value 0, and k is a constant, which contains the relation of the measuring units of β and γ. (J. J. Müller gives a very interesting *teleological* deduction of this formula in the "Proceedings of the Royal Academy of Sciences of Saxony," 12th December 1870, where he shows that *only by assuming this* relation between stimulus and sensation is "the difference of sensation conditioned by diversity of stimuli independent of the excitability, and the difference of sensation conditioned by diversity of excitability independent of the stimulus," two conditions on which alone consciousness is in a position to keep asunder, and thereby to recognise, the effects due to the stimuli and the excitability respectively.) If now β becomes smaller than b, *i.e.*, the intensity less than the threshold-value of the stimulus, γ becomes negative, and sinks as much below 0, as β sinks below b (with $\beta = 0$ γ is $= -\infty$).

These negative γ's now Fechner calls "*unconscious* sensations," with the full consciousness, however, of having only employed a license of speech, to signify that the sensation γ is the more removed from reality the further γ sinks below 0, *i.e.*, that *an ever greater increment of stimulation* is required in order first to restore the zero value of γ, and then to recall the latter to the limit of reality. The negative sign before γ accordingly signifies here (as elsewhere often the imaginary) the insolubility

of the problem, from the given quantity of a stimulus to calculate a sensation.

The real meaning of the negative sign, Fechner very properly says, can only be disclosed by the comparison of the rational calculation with the explained facts. Accordingly he dismisses the common illustration of heat and cold as not to the point, and discountenances the algebraic summation of positive and negative γ's, as being no less inadmissible than operating with positive and negative pieces of surface in calculating areas by means of rectangular co-ordinates.

"Mathematically the opposition of the signs can just as well be referred to the contrast of reality and non-reality, as of increment and decrement or directions. In the system of polar co-ordinates it signifies the opposition of reality and non-reality of a line, but in such a way that greater negative values mean a *greater distance from reality* than smaller ones. There cannot be the least objection to transfer to sensation as function of a stimulus that which is valid for the radius vector as function of an angle" (Psychophysik, ii. p. 40). What holds good here for the algebraic expression of the function, holds, of course, also for its geometrical illustration by a curve, where again the visible connection of the positive and negative part might warp the judgment. It is clear that it is difficult to find a significant expression for the negative γ's which would not give rise to misunderstanding. Perhaps the best course would be to say, without more ado, "unreal sensation." However, Fechner is not to be reproached for the arbitrary use of the phrase "unconscious sensation," since he is not aware of, or at any rate does not recognise, our positive signification of the Unconscious. What is worse is that Fechner was afterwards so inconsequent as to allow himself to be deceived by the continuity of the geometrical curves below the threshold, and to speak of a real connection of the consciousnesses of different individuals below the threshold.

I have entered into this matter at such length, because I desired to protect myself against any confusion of my view of the Unconscious with Fechner's conception of unconscious sensation, and to pay at the same time my tribute of respect to his excellent work. I also wished to avail myself of the opportunity of making the reader acquainted with the conception of the Threshold, which is of importance in very dissimilar departments of science, and which we, too, cannot dispense with in our inquiries. That for the rest the stimulation of the brain must be of a certain intensity, in order to compel the mind to react at all, is teleologically quite comprehensible; for what would become of us poor wretches, if we were obliged continually to react on the infinite quantity of infinitely small stimuli, which incessantly play around us? But if the mind once reacts on a cerebral stimulus, consciousness is also *eo epso* given, as will be shown in Chap. C. iii. In that case these reactions can no longer remain unconscious. If hereupon any one should have recourse to the theory of the infinitely little consciousness, he would find that theory refuted by experiments, showing that conscious sensation decreases continuously down to the zero point, to which the threshold of stimulation corresponds, thus, in fact, successively possessing the infinitely small values *above the threshold*, where an infinitely little consciousness is actually found, but at the threshold itself becoming 0, *i.e.*, *absolutely ceasing*. I refer for confirmation to Fechner's work.

The conception of the Unconscious has not as yet been much introduced into *Natural Science*. An honourable exception to the indifference of scientific men is afforded by the well-known physiologist Carus, whose works "Psyche" and "Physis" are substantially an investigation of the Unconscious in its relations to corporeal and mental life. How far he has succeeded in his attempt, and how much I have borrowed from him in my own work, I leave to the judgment of the reader. I only

add, that the idea of the Unconscious is purely presented by this writer, free from every infinitely little consciousness. Besides the works of Carus, the notion of the Unconscious has obtained recognition in a few special disquisitions, a recognition, however, seldom extending beyond the sphere of the particular inquiry. Thus, *e.g.*, Perty, in his book "Ueber das Seelenleben der Thiere" (Leipzig and Heidelberg, 1865), finds himself drawn on to a derivation of instinct from unconscious movements, and likewise Wundt, in his "Beiträge zur Theorie der Sinneswahrnehmung" (Leipzig and Heidelberg, 1862; also in Henle's and Pfeuffer's "Zeitschr. f. ration. Medicin," 1858 and 1859), admits the necessity of referring the origin of sensuous perception and of consciousness in general to unconscious logical processes, "since the processes of perception are of an unconscious nature, and only their *results* are wont to appear in consciousness" (ibid., p. 436).

"The suggestion of the *logical* character of the processes of perception," he says, "is a hypothesis of no lower order than any other assumption which we make in reference to the ground of natural phenomena; it possesses the essential requirement of every well-grounded theory, that it be at once the *simplest* and *most appropriate* expression under which the facts of observation can be subsumed" (p. 437). "If the first act of apprehension, which yet belongs to the sphere of the unconscious life, is already a process of inference, the law of logical development is thereby shown to hold even for this unconscious life; it is proved that there is not merely a conscious, but also an unconscious *thinking*. We believe we have hereby completely proved that the assumption of unconscious logical processes is not merely competent to *explain* the results of the processes of perception, but that it in fact also *correctly declares* the *real nature of these processes*, although the processes themselves are not accessible to immediate observation" (p. 438). Wundt is well aware that the expression "unconscious inference"

is an improper one; "only when *translated* into *conscious* life does the psychical process of perception take the form of inference" (p. 169). The unconsciously logical processes are carried on "with a *certainty* and *regularity*" which would be impossible in conscious inference, where there exists the possibility of error (p. 169). "Our mind is so happily designed that it prepares for us the most important foundations of cognition, whilst we have not the slightest apprehension of the *modus operandi*. This unconscious soul, like a benevolent stranger, works and makes provision for our benefit, pouring only the *mature fruits* into our laps" (p. 375).

Helmholtz adopts this view in essentials, although, more cautious than Wundt, he occupies himself solely with the external aspect of the matter. At all events, he admits this much: "We must diverge somewhat from the beaten track of psychological analysis, in order to satisfy ourselves, that we have here to do with the same sort of mental activity that is operative in inferences commonly so called" (Popular Scientific Lectures, ii. p. 92). He finds the difference to consist only in the external circumstance, that conscious conclusions are wrought out by means of *words* (which does not meet the case of animals and the deaf and dumb), whilst the unconscious inferences or inductions have only to do with *sensations*, images of memory, and intuitions (where it is not obvious why the latter should "never" be "expressible in the usual form of a logically analysed inference"). Helmholtz deserves especial praise for expressly pointing to the fact that conscious inferences, after the requisite material of representation has been fully supplied and elaborated, thrust themselves upon us precisely like unconscious inferences, "without any exertion on our part" (*i.e.*, on the part of our own consciousness), with all the energy of an external natural force (p. 95). Independently of the aforementioned, Zöllner also found himself driven to the assumption of unconscious inferences for an explanation of those

pseudoscopic phenomena which defy a merely physiological explanation. (Cf. Poggendorf's Annalen, 1860, vol. cx. p. 500 ff., and his recent work, "On the Nature of Comets; Contributions to the History and Theory of Knowledge," 2d ed., Leipzig, 1872.) Further, we are vividly reminded of Wundt's unconscious soul, which works for us like another being, when *Bastian* begins his "Contributions to Comparative Psychology" (Berlin, 1868) with the words (p. 1), "That it is *not we* who think, but that *it* thinks *in us*, is clear to him who is wont to pay attention to the internal processes." This "it" lies, however, as appears from pp. 120, 121, in particular, in the Unconscious. However, this investigator does not attempt to do more than throw out some rather vague suggestions.

In the current treatment of History, likewise, there are indications that the achievements of Schelling and Hegel (of which we shall speak in Chap. B. x.) have not yet been quite forgotten at the present day. Thus Freitag says, in the preface to the first volume of his "Bilder aus der deutschen Vergangenheit," 5th ed., vol. i. pp. 23, 24: "All great creations of popular force,—ancestral religion, custom, law, polity,—are to us no longer the outcome of individual effort; they are organic products of a higher life, which in every age only attains manifestation through the medium of the individual, and in all ages gathers up into itself the spiritual wealth of individuals into a mighty whole. . . . Thus one may speak, without intending anything mystical, of a *national soul*. . . . But *no longer conscious*, not so purposive (?) and rational as the volition of the individual man, is this life of the people. All that is free and rational in history is the achievement of individuals; the national energy works untiringly with the dark compulsion of a *primitive power*, and its spiritual productivity sometimes corresponds in a surprising manner to the *formative processes* of the *silently creative forces of nature*, which urge stem, leaves, and blossom out of the seed-grain of the plant." It is the same thought

carried further, that underlies the works of Lazarus on "Völkerpsychologie" (cf. my essay, "Ueber das Wesen des Gesammtgeistes," in the "Gesammelte philosophische Abhandlungen," No. v.)

In *Æsthetics*, Carrière in particular has laid stress on the importance of unconscious mental activity, and, supporting himself on Schelling, shows the interposition of conscious and unconscious mental activity to be indispensable for every artistic achievement. An interesting contribution to the Unconscious in Æsthetics is made by Rötscher in an essay on the *Demonic* (in his "Dramaturgische und ästhetische Abhandlungen"). Of the various ways in which the conception of the Unconscious has been turned to account since the appearance of the first edition of the present work, no notice can, of course, be taken here.

II.

HOW DO WE COME TO ASSUME AN AIM IN NATURE?

ONE of the most important and familiar manifestations of the Unconscious is Instinct, and the conception of Instinct rests on that of Purpose. An examination of the latter is therefore indispensable to our inquiry, and as it does not well fit into Section A., I have relegated it to the Introduction. It is possible that the ensuing treatment will incur the reproach of aridity; and any one with an aversion for discussions involving calculations of probability may, if already convinced of the validity of the assumption of an Aim in Nature, pass over the present chapter. But I cannot refrain from adding that the way in which this important problem is here resolved, at least on its *formal* side, is, so far as I know, both novel and also the only possible one.

The notion of Design has played a highly important part in the speculations of many great thinkers, and has formed the foundation of a considerable portion of their systems; as in the case of Aristotle and Leibniz. Kant was, of course, obliged to deny its reality outside conscious thought, as he did not admit the reality of time (cf. Trendelenburg, "Logische Untersuchungen," chap. viii. 5). Modern Materialism likewise denies its reality, because it refuses to admit the existence of mind apart from an animal brain. In our modern physical science the notion of Design, chiefly through the influence of Bacon, has rightly fallen into discredit, because it had so often served as the convenient resource of indolent reasoners to avoid the arduous search after efficient causes, and because in

the part of natural science concerned with matter alone, Design as a spiritual cause must necessarily be excluded. Spinoza was completely blinded to the fact of Purpose in Nature, because he believed final causality to be in contradiction with logical necessity, whereas it is in truth identical with it (Chap. C. xv. 3). Darwinism denies adaptation in Nature, not as fact, it is true, but as principle, and thinks itself able to comprehend the fact as *result* of mindless causality; as if Causality itself were anything more than a logical necessity, discernible by us only as fact (not on the side of the internal principle), and as if the adaptation, actually manifested as result at the end of a series of events, must not have been from the very first the prius of these adjustments as plan or principle! But if, on the one hand, so great and honest a spirit as Spinoza could look in Nature's face and deny Design, if, on the other hand, Purpose seems to others to play a part so important, and even the freethinking Voltaire does not venture to explain away the evidence of an Aim in Nature, however inconvenient and incompatible with the rest of his opinions its admission might be, there must indeed be something very peculiar about the idea.

The notion of a purposed End is derived in the first instance from the experience of our own conscious mental activity. My *end* is a future event imagined and willed by me, the realisation of which I am not in a position to bring about directly, but only through a chain of causation (means). If I do not *imagine* the future occurrence, it does not exist for me; if I do not will it, I do not purpose it; it is indifferent or repugnant to me. If I can *directly* realise it, the causal link, the means, falls away, and along with it disappears also the notion of a designed end (which is only the term of a relation the other member of which is the concept, means), for action then follows immediately upon volition. When I see that I am not able to realise my will directly, and recognise the means as efficient cause of the end, the

willing of the end becomes to me a motive, *i.e.*, efficient cause for the willing of the means; this in its turn becomes efficient cause for the realisation of the means through my act, and the realised means becomes efficient cause of the realisation of the end. Thus we have a triple causality with the four terms: Willing of the end, willing of the means, realising of the means, realising of the end. Only in rare cases is all this confined to the purely subjective mental sphere, *e.g.*, in the composition of a poem, the elaboration in the mind of any artistic conception, or other mental effort. More commonly we find three of the four different modes of causality immediately presented, namely, causality between mental and mental event (willing of the end, willing of the means), mental and material event (willing and realisation of the means), and between material and material event (means and end). The fourth kind of causality too, that between material and mental event, also often occurs; it lies then, however, before the beginning of our reflection in the motivation of the willing of the end through impressions of sense. It is, therefore, evident that the union of willed and realised end, or final causation, is by no means something existing by the side of or even despite causality, but that it is only a particular combination of different kinds of causality, such that the first and last terms are identical, only the one ideal and the other real, the one presented in the willed idea, the other in reality. Far from destroying the exceptionless character of the law of causation, *it rather presupposes it*, and that too not only between matter and matter, but also between mind and matter, and mind and mind. It denies freedom to the single empirical mental act, and brings it too under the necessity of the law of causality. This may be the first word towards coming to an understanding with the opponents of the doctrine of final causes.

Let us assume that M has been observed to be an efficient cause of Z, and let all the material circumstances

n.n. existing at the moment of the occurrence of M have been ascertained. Further, let the proposition be admitted that M must have a sufficient efficient cause. Now three cases are possible: either the sufficient cause of M is contained in *n.n.*, or certain other circumstances, but those material, which have escaped observation, are still wanting, or, lastly, the sufficient cause of M is not to be found on the material plane, consequently must be sought in the spiritual sphere. The second case contradicts the assumption, that all the material circumstances, which immediately preceded the occurrence of M, are contained in *n.n.* If such a condition is, strictly speaking, incapable of being satisfied, since the whole position of the system of the world would have to be taken into account, yet it is easy to see that the cases are very rare, where conditions essential to the occurrence can lie outside a well-defined region, and no unessential circumstance need be taken note of; *e.g.*, the circumstances essential to the spider's spinning nobody will look for outside the spider, (say) in the moon. If we then assume the probability, that any material circumstance essential to the event has not been taken note of, and therefore not contained in *n.n.*, to be so small that it may be neglected,[1] there remain only the two cases, that the sufficient cause is contained in *n.n.*, or is of a spiritual nature. That the one or the other case must occur is their certainty, *i.e.*, the sum of their probabilities is equal to 1 (which signifies certainty). If now the probability that M is caused by *n.n.* $= \frac{1}{x}$, then the probability that it has a mental cause $= 1 - \frac{1}{x} = \frac{x-1}{x}$;

[1] It must always be remembered, that events are never probable, but always necessary, to an omniscient being, and that it is only our ignorance which makes possible that uncertainty, which is the foundation of the calculus of probability. Only when our ignorance is utterly disproportionate to the knowledge available for calculation does the probable error, which every coefficient of probability possesses, become so great as to make the value of the latter illusory. Otherwise, if the probable errors in the statement of the problem are confined within moderate limits, the probable error in the result in our examples becomes inappreciable.

the smaller $\frac{1}{x}$ becomes, the larger x becomes, the more $\frac{x-1}{x}$ approaches to 1, *i.e.*, to certainty. The probability $\frac{1}{x}$ would become equal to 0, if we had the direct proof in our hands that M is not caused by *n.n.*; if, for instance, a case could be established where *n.n.* is present and M has not occurred. This is certainly impossible with the whole of *n.n.*, since every spiritual cause must have material connections, but we shall often succeed in eliminating at least one or more of the circumstances *n.n.*, and the fewer the number of the circumstances *n.n.* to be regarded, which being present the event M at any time occurs, the easier becomes the determination of the probability that they do not contain the sufficient cause of M.

To make the matter clearer let us take an example. That brooding on the egg is the cause of the young bird being hatched is an observed fact. The material circumstances (*n.n.*) immediately preceding the brooding (M) are the existence and the constitution of the egg, the existence and the bodily constitution of the bird, and the temperature of the place where the egg lies; further material circumstances are inconceivable. The probability is in the highest degree small, that these circumstances are sufficient to cause the cheerful and lively bird to abandon its customary and instinctive way of life and to prompt it to a wearisome brooding over its eggs; for though the increased pressure of blood in the abdomen may produce a heightened feeling of warmth, this is not diminished, but increased, through the quiet sitting in the warm nest on the blood-hot eggs. We already see that the probability $\frac{1}{x}$ is very small, and $\frac{x-1}{x}$ approaches 1. If we, however, put the question the other way, viz., whether a case is known to us where bird and eggs are the same and yet incubation does not take place, we are met by the case of birds which have made their nests in

hot forcing-houses and have omitted to brood, just as the ostrich hatches its eggs only in the night—in hot Nigritia not at all. Accordingly of the circumstances *n.n.*, bird and eggs are obviously not sufficient causes of the brooding (M), and there remains as the only material circumstance, which could avail to make the cause sufficient or complete, the temperature of the nest. No one will think it probable that the lower temperature is the *direct* occasion of the incubation, consequently for the particular event the existence of a spiritual cause, through which alone the ascertained influence of temperature on the event can be thought to be brought about, becomes as good as certain, although at the same time the question of the precise nature of this spiritual cause still remains open.

The estimation of the probability is not always as easy as in this instance, and very rarely when M is simple will it approach so near to certainty. In lieu thereof we are usually helped by the circumstance that M, the observed cause of Z, for the most part is not simple, but consists of different independent[1] events, P_1, P_2, P_3, P_4, &c. If we now, again, in the first instance, leave on one side the question whether all the essential material circumstances have been taken into account, we have to ascertain:

The probability,

that P_1 has its sufficient cause in *n.n.* $= \frac{1}{p_1}$

„ P_2 „ „ „ $= \frac{1}{p_2}$

„ P_3 „ „ „ $= \frac{1}{p_3}$

„ P_4 „ „ „ $= \frac{1}{p_4}$

[1] To ascertain the actual *independence* of the co-operating conditions in any given case may often be very difficult, and a main source of error. This material difficulty in practical application, however, does not here concern us, where we are only dealing with the establishment of the formal side of the purposive thought-process.

Hence the probability, that M has its sufficient cause in *n.n.* $= \frac{1}{p_1\, p_2\, p_3\, p_4}$; for M is the sum of the events P_1, P_2, P_3, P_4; consequently, if M is to be produced by *n.n.*, *both* P_1, *and* P_2, *also* P_3, P_4, *must* at the same time be produced by *n.n.* This probability is, however, the product of the several probabilities. (If, *e.g.*, on the first throw of a die, the probability of throwing $2 = \frac{1}{6}$, on the second likewise $= \frac{1}{6}$, the probability of throwing 2 with both dice at once $= \frac{1}{6} \cdot \frac{1}{6}$.) Consequently, the probability that M is not sufficiently accounted for by *n.n.*, that it accordingly still requires a spiritual cause

$$= 1 - \frac{1}{p_1\, p_2\, p_3\, p_4} = \frac{p_1\, p_2\, p_3\, p_4 - 1}{p_1\, p_2\, p_3\, p_4}.$$

Here, then, $p_1\, p_2\, p_3\, p_4$ is what x was before, and it appears from this that p_1, p_2, p_3, and p_4 only need to be individually a little greater than $\sqrt[4]{2} = 1{\cdot}189$, consequently $\frac{1}{p_1}$, $\frac{1}{p_2}$, $\frac{1}{p_3}$, and $\frac{1}{p_4}$ each a little less than 0·84, for $p_1\, p_2\, p_3\, p_4$ as product of the four factors to become greater than 2, and $\frac{p_1\, p_2\, p_3\, p_4 - 1}{p_1\, p_2\, p_3\, p_4}$ greater than $\frac{1}{2}$. In other words, if, for the several events P_1, P_2, P_3, P_4, the probability of a spiritual cause $\left(1 - \frac{1}{p}, \text{ \&c.}\right)$ is only small ($< 0{\cdot}16$), yet for their sum M its value rises as the number of distinct events which go to make up M becomes larger. *E.g.*, let the probability of a spiritual cause be for each on the average only $\frac{1}{5} = \left(1 - \frac{1}{p}\right)$, then $\frac{1}{p_1} = \frac{1}{p_2} = \frac{1}{p_3} = \frac{1}{p_4} = \frac{4}{5} = 0{\cdot}8$, consequently $\frac{1}{p_1\, p_2\, p_3\, p_4} = 0{\cdot}4096$ and $1 - \frac{1}{p_1\, p_2\, p_3\, p_4} = 0{\cdot}5904$, a very respectable probability of about $\frac{3}{5}$. One easily

sees that those parts of M, which undoubtedly result merely from *n.n.*, are self-eliminated from the calculation, since their probability enters as 1 into the product of the rest, *i.e.*, leaves it unchanged.

Let us consider an example of this case also. As cause of vision (Z) a multitude (M) of conditions (P_1, P_2, P_3, P_4) have been observed, the most important of which are the following:—(1.) Special bundles of nerves issue from the brain, which are of such a nature that each stimulus affecting them is perceived in the brain as a sensation of light; (2.) They terminate in a peculiarly formed very sensitive nervous tissue (retina); (3.) Before the latter is placed a camera-obscura; (4.) The focal distance of this camera is in general adapted to the indices of refraction from *air* into the ocular humours (except in the case of aquatic animals); (5.) By means of various contractions the focal distance is capable of being changed for longsighted persons from a few inches to infinity; (6.) The quantity of light to be admitted is regulated by the contraction and dilatation of the iris, whereby an additional aid to clear vision is afforded by the cutting off of the peripheral rays; (7.) The segments of the rods or cones continuous with the nerve-endings form a mosaic, so contrived, that each segment changes light-waves of definite wave-lengths (colour) into stationary waves, and thus produces in the appropriate primitive nerve-fibre the physiological colour-vibrations; (8.) Binocular vision conditions the perception of solidity and reveals the third dimension of space; (9.) The two eyes may be simultaneously moved by means of special nerve-bundles and muscles, but only in the same direction, thus unsymmetrically in reference to the muscles; (10.) The clearness of the visual pictures increasing from periphery to centre prevents the otherwise unavoidable distraction of the attention; (11.) The reflex turning of the visual axis to the brightest point of the field of vision facilitates education by the medium of sight and the for-

mation of the ideas of space; (12.) The constant flow of tears keeps the surface of the cornea transparent and removes the dust; (13.) The secluded position in the bony socket, the lids which close reflectorially on the approach of danger, the eyelashes and eyebrows, protect the organ from being rendered useless by external influences.

All these thirteen conditions are necessary for the existence and maintenance of normal vision; they are all there at the birth of the child, although the occasion for their exercise has not yet been afforded; the circumstances preceding and accompanying their origin (*n.n.*) are accordingly to be sought in procreation and the life of the fœtus. The physiologists, however, it may safely be said, will never succeed, with the least show of probability, in exhibiting the sufficient cause for the origin of all these conditions in the blastoderm of the fertilised ovum and the material fluids which supply it: one cannot see why the child should not develop even without optic nerve or without eye at all. Suppose now, however, that we fell back upon our ignorance, although that is a bad ground for positive probabilities, and assumed a tolerably high probability for the development of any of the thirteen conditions from the material conditions of embryonic life, say $\frac{9}{10}$ (a probability which but a small portion of our most certain knowledge possesses), still the probability that *all* these conditions follow from the material relations of the embryonic life is only $0{\cdot}9^{13} = 0{\cdot}254$. The probability, therefore, of a spiritual cause being required for the sum of conditions = 0·746, *i.e.*, almost $\frac{3}{4}$. In truth, however, the several probabilities perhaps = 0·25, or at the most 0·5, and accordingly the probability of a spiritual cause for the whole = 0·9999985 or 0·99988, *i.e.*, certainty.

We have just seen, how *from material events we may conclude to the co-operation of spiritual causes, without the latter being open to immediate inspection.* From this to the recognition of final causes there is but one step. A spiritual *cause* for material events can only consist of

spiritual *activity*; and, moreover, where the spirit has to work outwardly, Will must be present, and the idea of *what* the Will wills cannot be wanting, as is more fully discussed in Chap. iv, A. The spiritual cause is thus Will in union with Idea, the idea namely of the material event which is to be brought about (M). We assume here, for the sake of brevity, that M proceeds *directly* from a spiritual cause, which is by no means necessary. Let us ask further, what can be the cause of M being *willed?* Here the causal chain is at once broken, if we do not adopt the simple natural hypothesis, the willing of Z. Now, it is obvious that Z cannot influence the event as real existence, but only idealiter, *i.e.*, as mental object, according to the axiom that the cause must be prior to the effect. That, however, willing-of-Z is a sufficient motive for willing-of-M is likewise a self-evident proposition, for whoever wishes to produce the effect must also will to produce the cause. To be sure on this hypothesis we only obtain a genuine explanation, if the willing-of-Z is in itself more comprehensible to us than the willing-of-M. The sufficient motive of the willing-of-Z must then lie either in the realisation of Z, or in a willing of Z_1, which Z_1 follows on Z as its effect; a consideration admitting of indefinite repetition. The more evident is the last motive at which we stop, the more probable does it become that the willing-of-Z is cause of the willing-of-M.—It is easy to see that this is, in point of fact, the course of our speculation with regard to natural ends. We have seen, for example, that the bird broods because it wills to brood. We must either be satisfied with this barren result and forego all explanation, or we must ask why is brooding willed? Answer: because the development and hatching of the young bird is willed. We are still in the same plight; we therefore inquire further, why is the development of the young bird willed? Answer: because propagation is willed; and this, because the continued duration of the species, despite the shortness of

the individual life, is willed; and here we get a motive which may provisionally satisfy us. We are accordingly entitled to assume, that the willing of the development of the young bird is the cause (no matter whether direct or indirect) of the willing of the brooding, *i.e.*, that the former is aimed at through the mean of brooding. (The point is not, whether the bird is conscious of this aim or not, although the supposition would be absurd in the case of a young bird bred in seclusion, for whence could it have derived the conscious knowledge of the effect of incubation?) Certainly there always remains the possibility that an immaterial cause is at the bottom of the event M, without its being motived by the will to produce Z; consequently the probability that Z is *purposed* will be a product of the probability that M has a spiritual cause $\left(1 - \frac{1}{x}\right)$, and of the probability that this spiritual cause has the willing of Z for its cause $\frac{1}{y}$; the product $\left(1 - \frac{1}{x}\right)\frac{1}{y}$ must, however, of course be smaller than either of the factors, since every probability is less than 1. Here, too, the probability may be considerably increased, if the several conditions (P_1, P_2, P_3, P_4), of which M is usually compounded, be taken into account. The probability that Z is aimed at by means of P_1 is, according to the foregoing, $\left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}$, if $\frac{1}{q_1}$ is the probability that the immaterial cause has for its cause the *willing of Z:* accordingly the probability that P_1 has *not* Z in view $= 1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}$. Consequently the probability that *neither* P_1, *nor* P_2, *nor* P_3, *nor* P_4 has Z for end, *i.e.*, that Z is in nowise aimed at through M = the product of the several probabilities

$$= \left[1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}\right]\left[1 - \left(1 - \frac{1}{p_2}\right)\frac{1}{q_2}\right] [\&c.$$

$$\text{or} = \prod_{1\,..\,n}\left(1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}\right.$$

Consequently the probability that M in any part thereof has Z for its end, *i.e.*, the probability that Z is at all an end with respect to M, is equal to the complement of this quantity in respect of 1, $= 1 - \overbrace{}^{1..n}\left(1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}\right.$. $\frac{1}{p_1}, \frac{1}{p_2}$, &c., are genuine fractions, just as $\frac{1}{q_1}, \frac{1}{q_2}$, &c., consequently also

$$1 - \frac{1}{p_1}, \text{ and } \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}, \text{ and } 1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1},$$

and so on, consequently also their product,

$$\overbrace{}^{1..n}\left(1 - \left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}\right.$$

Hence it follows, that this product becomes smaller the larger the quantity n becomes; for if n increases to 1 the newly-introduced factor is

$$1 - \left(1 - \frac{1}{p^{n+1}}\right)\frac{1}{q^{n+1}}.$$

This factor, like the product, is a genuine fraction, therefore the product of both must be a genuine fraction, which is smaller than either of the two factors, *q. e. d.*—From the circumstance that n increasing $\overbrace{}^{1..n}\left($ becomes smaller, it follows that n increasing $1 - \overbrace{}^{1..n}\left($ becomes larger; accordingly this probability also grows with the number of conditions of which M is compounded. Let

$$\left(1 - \frac{1}{p_1}\right)\frac{1}{q_1}, \left(1 - \frac{1}{p_2}\right)\frac{1}{q_2}, \text{ &c.}$$

be on the average $= \frac{1}{4}$, *i.e.*, let the probability, that each of the conditions of Z taken singly has this particular end in view, be on the average $= \frac{1}{4}$, consequently very improbable. Then $1 - \left(1 - \frac{1}{p}\right)\frac{1}{q}$ is on the average $= \frac{3}{4}$; this raised merely to the fourth power gives $\frac{81}{256}$, consequently

$$1 - \left[1 - \left(1 - \frac{1}{p}\right)\frac{1}{q}\right]^4 = \frac{175}{256} = \text{over } \frac{2}{3};$$

i.e., there results on the whole a very fair probability, for any one, who should bet 2 to 1 on the existence of Design, would still win. The application to the example of vision is obvious.

We learn from the above, that those effects in particular can safely be regarded as ends, which need for their production a considerable number of causes, each of which has a certain probability of being means to the particular end. It is, therefore, no wonder that just the most general phenomena of Nature have always been most widely admitted to be ends. For example, the existence and continuance of organic nature as end of its own arrangements, as well as of those of inorganic nature. It is precisely here that an infinite number of causes co-operate to secure one grand result, the continuance of organisms. So far as these causes lie in the organisms themselves, they are divisible into those which conduce to the maintenance of the individual, and those which subserve the preservation of the species. Both of these points have seldom wanted recognition as natural ends. If we now call such an end cognised with the greatest possible certainty Z, we know that none of its many causes can be wanting, if it is to be attained; thus, *e.g.*, not M. Now since I know that both Z and M were willed and imagined *before* their real existence, and I see that among others the external cause M_1 is requisite for the occurrence of M, the assumption, that M_1, too, was willed and imagined *before* its real existence, obtains a certain probability through this regressive inference. Whether, namely, M be realised through the immediate action of a spiritual cause, or indirectly in that it follows from material causes, of which a few or several are spiritually caused, in both cases M_1 may be willed and represented before its real existence as means to the end M. In the latter case this is perfectly clear, but also in the former case the immediate interweaving of a spiritual cause in the realisation of M does not preclude the material causes of M, and therefore of M_1, springing in larger

or smaller part, from spiritual causes, which had M and Z for their ends. In organic nature this is even the normal state of the case. The result of this reasoning in any case is a certain probability that M_1 is also aimed at, and although it may not be in itself great, still it is always a strengthening of the directly obtained degree of probability which is not to be despised, since all later links in the chain have the benefit of this probability by its repetition at every stage.

From these considerations it is evident that the ways, in which ends are perceived in Nature, are multifariously combined. No claim is set up for the application of such calculations in practice, but they serve to clear up the principles which more or less unconsciously regulate the logical procedure of every one who correctly reflects on this subject, and who does not dogmatise thereon from the lofty heights of some *à priori* system. The examples adduced in this chapter are not intended to serve as a proof of the truth of Teleology, but only for the elucidation and illustration of the abstract expositions, which likewise will assuredly convert no opponent to the hypothesis of ends in Nature, for only examples *en masse* can do that; but perhaps they will lead some, who thought themselves to have outgrown the belief in Purpose as manifested in Nature, to weigh alleged instances thereof more carefully and impartially; and no other than this, viz., as a preparation for Section A. of our inquiry, was the design of the present chapter.

A.

THE MANIFESTATION OF THE UNCONSCIOUS IN BODILY LIFE.

"The Materialists endeavour to show that *all*, even *mental* phenomena, are *physical:* and *rightly;* only they do not see that, on the other hand, everything physical is *at the same time metaphysical.*"—SCHOPENHAUER.

I.

THE UNCONSCIOUS WILL IN THE INDEPENDENT FUNCTIONS OF THE SPINAL CORD AND GANGLIA.

THE time has gone by when the animals were contrasted with the free man as locomotive machines, as soulless automata. Deeper insight into the life of animals, strenuous effort to understand their language and the motives of their actions, has shown that with respect to mental capacity man differs from the brutes in degree and not in kind, just as the brutes differ among themselves; that in virtue of this higher capacity he has created a more perfect form of speech, and thereby has gained in the course of generations that perfectibility which is wanting to the brutes, owing to their imperfect means of communication. We accordingly know now, that we cannot compare the educated man of to-day with the animals, without being unjust to the latter, but only the peoples which are but little removed from the state in which they were fashioned by the hand of Nature; for we know that even our own race, privileged as it now is by higher aptitudes, was once what these still are, and that our present higher qualities of brain and mind have been only gradually attained through the law of hereditary transmission of acquired power. Thus the animal kingdom is presented to us as a finished scale of being, with pervading analogies. The fundamental spiritual faculties must be essentially the same in all, and what in the higher members appear to be new faculties are only secondary powers, which have been developed

in certain directions by the higher culture of common elementary capacities. In all beings these fundamental or primitive activities of the mind are willing and thinking; for feeling (as I shall show in Chap. iii. B) may, with the help of the Unconscious, be developed from these two.

We shall speak in this chapter only of the Will. It is scarcely to be doubted, that what we regard as immediate cause of our action and call Will is to be found in the consciousness of animals as causal moment of their action, and must also be called Will, if we cease to give ourselves airs of superiority by employing different names for the very same things (as devouring, swilling, littering, for eating, drinking, child-bearing). The dog *will* not separate from its master; it *wills* to save the child which has fallen into the water from the well-known death; the bird *will* not let its young be injured; the cock *will* not share his hen with another, &c. I know there are many people who think they elevate man, when they ascribe as much as possible in the life of animals, especially the lower ones, to "reflex action." If these persons have in their minds the ordinary physiological sense of the term reflex action, involuntary reaction on an external stimulus, it may safely be said that either they have never observed animals, or that they have eyes but they see not. If however they extend the meaning of reflex action beyond its usual physiological acceptation, they are assuredly right, but then they forget: firstly, that man, too, lives and moves in pure reflex actions—that every act of will is a reflex action; and secondly, that *every* reflex action is an act of will, as we shall show in Chap. V.

Let us then retain provisionally the usual narrower acceptation of reflex action, and speak only of such acts of will as are not reflexes in this sense, *i.e.*, are not involuntary reactions of the organism on external stimuli. There are two marks in particular whereby volition may be distinguished from reflex actions: firstly, emotion, and

secondly, consistency in carrying out an intention. Reflex actions are mechanical and passionless; but one need not be skilled in the art of physiognomics to clearly perceive the presence of an emotion even in the brutes. It is well known that several species of ants wage war with one another, one state subjugating and enslaving the citizens of another state, in order to obtain labourers for its operations. These wars are waged by a warrior caste, whose members are larger and stronger, and provided with more powerful nippers. It is only necessary to have once witnessed this army knocking at the hostile edifice, to have seen the workers withdraw and the warriors come out to do battle, with what bitterness the fight is carried on, and how, after an unsuccessful contest, the constructors of the building surrender themselves captive, to have no longer any doubt that this premeditated raid shows a very decided will, and is something altogether different from reflex action. The like is the case with the swarms of robber-bees.

Reflex action disappears and reappears with the external stimulus, but it cannot form a purpose, which it pursues under changed external circumstances with appropriate change of means. *E.g.*, when a decapitated frog, having remained quiet a long time after the operation, suddenly begins to make natatory movements or to hop away, one might be inclined to look upon this as mere physiological reflex action, as result of the irritation of the terminations of the divided nerve by the air. But when the frog in various experiments, the cutaneous irritation and the part affected being the same, overcomes different obstacles in a different way, but equally suited to the purpose; when, having taken a fixed direction, and being turned therefrom, it tries with rare obstinacy constantly to regain it; when it creeps away under a cupboard or into other odd corners, manifestly to seek protection from its persecutors,—there is unmistakable evidence of non-reflectorial acts of will, regarding which

even the physiologist Goltz justly concludes from his careful experiments, that there is no avoiding the assumption of an intelligence not confined to the cerebrum, but astricted to various central organs for the exercise of different functions (*e.g.*, to the corpora quadrigemina for the maintenance of equilibrium).

From this example of the decapitated frog and the volition of all invertebrate animals (*e.g.*, insects) it follows that *no brain at all* is requisite for the exercise of will. Since in the invertebrata the œsophageal ganglia take the place of the brain, we must assume that these also suffice for the act of will, and in the above-mentioned frog cerebellum and spinal cord must have supplied the place of the cerebrum. But we cannot confine the will of invertebrate animals to the œsophageal ganglia; for when the anterior part of one bisected insect continues the act of devouring, and the posterior part of another the act of propagation, when praying crickets with their heads cut off even seek their females for days, find them and copulate, just as if they were unscathed, it is tolerably clear that the will to devour has been an act of the œsophageal ring, but the will to propagate, in these cases at least, an act of other ganglia of the trunk. The like independence of the will in the different ganglia of one and the same animal is observed, when the two halves of a divided earwig, or of an Australian ant, turn against one another, and, under the unmistakable influence of the passion of anger and lust of fighting, contend furiously with their antennæ till exhaustion or death ensues. But we must not limit the activity of the will even to ganglia; for we find voluntary action even in animals of a very low type, where the microscope of the anatomist has discovered no trace either of muscular fibrin or of nerves, but only the fibroin of Mulder (now called protoplasm). Here probably the semifluid slimy substance of the animal, as in the first stages of embryonic development, fulfils in an inferior manner those conditions

to which the nerve substance owes its irritability, and special fitness as an instrument of the will, viz., the easy mobility and polarisability of the molecules. Let any one take a glass of water containing a polype, and place it in such a position that a part of the water is illuminated by the sun; the polype will instantly propel itself out of the dark towards the illuminated part of the water. If now a living infusorion be placed therein and it approaches within a few lines of the polype, the latter perceives it—God only knows how—and produces a whirlpool with its arms, in order to draw it within its grasp. On the other hand, should a dead infusorion, a small vegetable organism, or a particle of dust, approach quite as close, it does not trouble itself at all about it. The polype then perceives the animalcule to be living, draws therefrom the inference that it is fit for food, and adopts means to bring it within reach of its mouth. Not seldom also one may see two polypes in bitter conflict over a prize. No one will venture to call a will guided by a sense-perception so fine and so clearly manifested physiological reflection in the ordinary sense of the term, otherwise we should have to term it reflex action when the gardener bends the bough of a tree to reach its fruit. Accordingly, when we see acts of will in animals destitute of nerves, we can certainly not hesitate to recognise the same in ganglia.

This result is also suggested by comparative anatomy, which teaches that the brain is an aggregation of ganglia connected with nerve-fibres, and that the spinal cord in its central grey matter is likewise a series of ganglia which have coalesced. The Articulata are the first to show a weak analogue of the brain in the form of two nodules connected by the œsophageal ring and also of the spinal cord in the so-called ventral cord, the latter containing ganglia united by fibres, each of which answers to a segment and pair of legs. Accordingly physiologists assume as many independent

centres in the spinal cord as there are pairs of spinal nerves issuing therefrom. Among the Vertebrata there are fishes, whose brain and spinal cord consist of a number of ganglia, which lie in a row behind one another. The composition of a central organ from several ganglia is positively confirmed by the metamorphosis of insects, when certain ganglia, which are separate in the larva state, appear consolidated at a more advanced stage of development.

These facts may suffice to prove the essential resemblance of brain and ganglia, brain-will and ganglia-will. But now, if the ganglia of lower animals have their independent wills, if the spinal cord of a decapitated frog has its will, why should not the so much more highly organised ganglia and spinal cord of the higher animals and of man also have their will? If in insects the will to devour lies in anterior, the will to procreate in posterior ganglia, why in man should not such a division of labour be likewise provided for his will? Or is it conceivable that the same natural phenomenon should in the less perfect form exhibit effects which are entirely wanting in the more perfect form? Or must we suppose that in man the conduction is so good, that every ganglionic volition is immediately transmitted to the brain and appears in consciousness undistinguishable from the volition generated in the brain? This may, perhaps, be true to a certain extent for the upper parts of the spinal cord, certainly not for all the rest, since the channels of sensation from the hypogastric plexus are almost imperceptible. No other course is left open, then, but to ascribe independent wills to the human ganglia and spinal cord, the manifestations of which it only remains empirically to prove. That in the case of higher animals the muscular movements which effect external actions are more and more under the control of the cerebellum, and consequently centralised, is well known. Facts, therefore, will not be forthcoming here to any great extent;

and this is doubtless the reason why hitherto the independence of the ganglionic system in higher animals has been so little recognised by physiologists, although defended by the most recent investigators. Those voluntary acts, on the contrary, which are actually to be ascribed to the ganglia, have been usually regarded as reflex actions, whose stimuli are said to exist in the organism itself, which stimuli accordingly were arbitrarily assumed when they were not assignable. In part these assumptions may be justified; they then belong to the chapter on Reflex Actions. It is not a large part, however, in any case, and, moreover, it cannot do any harm, to consider here even those which are reflex actions proper from the point of view of the Will, since it will be hereafter proved that every reflex action contains an unconscious Will.

The independent movements effected by the sympathetic nervous system, *i.e.*, without the co-operation of brain and spinal cord, are: (1.) The beating of the heart; (2.) the movements of the stomach and the intestines; (3.) the tonic contractions of the lower part of the alimentary canal and muscular coats of the arteries; (4.) an important part of the processes of organic life, so far as they depend on nervous action. The intermittent type of movement is shown in the beating of the heart, tone of the arteries, and movements of the intestines; and the persistent movements are illustrated by the other processes. The beating of the heart, as may be seen in an exposed frog's heart, begins with the contraction of the venæ cavæ; the contraction of the auricles follows, then that of the ventricles, and finally that of the bulbus aortæ. In an excised frog's heart sprinkled with salt water the cardiac ganglia continue to perform their function of stimulating the heart to beat for hours together. In the case of the intestines the movement begins at the lower part of the œsophagus, and progresses vermicularly from above downwards, one wave hardly completing its course before the next begins. Have

not these movements of the intestines the most surprising resemblance to the creeping of a worm, with the simple difference that the worm propels itself forward on its support, whilst here the worm is fastened, and the (inner) support, the masses of food and the fæces are pushed forward? Should the one be called Will and not the other? The "tone" is a slight muscular contraction, which is ceaselessly exhibited by all muscles during life, even in sleep or swoon. In the case of muscles subservient to volition (the cerebral will), it is maintained by the spinal cord, and there is only no movement of the limbs, because the actions of the opposing muscles (antagonists) neutralise one another. Where, therefore, there are no opposing muscles (as, *e.g.*, in the circular sphincters), the contraction is clearly manifested, and can only be overcome by strong pressure of the fæces. The tone of the intestines, arteries, and veins depends on the sympathetic system, and the latter is absolutely necessary for the circulation of the blood. Lastly, as concerns secretion and nutrition, these can be influenced by the nerves, partly by means of dilatation and contraction of the capillary vessels, partly by tension and relaxation of the membranes concerned in osmosis, partly through the setting up of chemical, electrical, and thermal currents. All these functions are carried on exclusively by subordinate ganglia through the agency of the sympathetic fibres found in all nerve-trunks, which are chiefly distinguishable from the sensory and motor fibres by the absence of a medullary sheath.

The surest proofs of the independence of the ganglionic system are derived from Bidder's experiments on frogs. The spinal cord having been completely destroyed, the animals lived often six, sometimes ten weeks (with gradually slackening heart-beat). On destruction of the brain and spinal cord, the medulla oblongata alone being spared (for breathing), they lived six days; when this also was destroyed, the beating of the heart and circulation

of the blood could be still observed even on the second day. The frogs whose medulla oblongata had been preserved ate and digested their worms after six-and-twenty days, whilst micturition took place regularly.

Besides the above-mentioned tone of the voluntary muscles, the spinal cord (including the medulla oblongata) regulates all involuntary movements of the voluntary muscles (reflex movements, see Chap. V.) and the respiratory movements. The latter have their central organ in the medulla oblongata; and not merely a large number of the spinal nerves, but also the *N. phrenicus, accessorius, Willisii, vagus,* and *facialis,* co-operate in the production of these highly complicated movements. Although the cerebral will is able for a short time to strengthen or to suppress the respiratory movements, it can never entirely abolish them, since, after a little pause, the will of the spinal cord regains the upper hand.

The independence of the spinal cord on the brain is likewise proved by many beautiful physiological experiments. A hen, from which Flourens had removed the entire cerebrum, sat indeed motionless as a rule; but on going to sleep it tucked its head under its wings; on waking, it shook itself and preened its feathers. When pushed, it ran forward in a straight line; when thrown into the air, it flew. It did not eat spontaneously, but only swallowed the food thrust into its bill. Voit repeated these experiments with pigeons. They first fell into a deep sleep, from which they only awoke after a few weeks; then, however, they flew and moved of their own accord, and comported themselves in such a manner as to leave no doubt of the existence of their sensations; only intelligence was lacking, and they did not spontaneously take food. Thus a pigeon, having thrust its beak against a suspended wooden pendulum, caused it to swing for upwards of an hour till Voit's return, so that the pendent spool over and over again struck its beak. On the other hand, such a brainless pigeon endeavours to evade a

hand trying to grasp it, to carefully avoid obstacles in its flight, and can settle cleverly on narrow supports. Rabbits and guinea-pigs, whose cerebrum has been removed, run freely about after the operation; the behaviour of a decapitated frog has been already mentioned. All these movements, as the preening of its feathers by the hen, the leaping of rabbits and frogs, take place without noticeable external stimulus, and are so like the same movements in uninjured animals that it is impossible to assume a difference in the underlying principle in the two cases: in the one case as in the other, there is a manifestation of will. Now we know that the higher animal consciousness is conditional on the integrity of the cerebrum (see Chap. ii. C.), and when this is destroyed, it is said these animals are without consciousness, and accordingly act and will unconsciously. But the cerebral consciousness is by no means the sole, but merely the highest consciousness of the animal, the only one which in higher animals and in man attains to self-consciousness, to the *ego*, therefore also the only one which I can call *my* consciousness. That, however, the subordinate nerve-centres must also have a consciousness, if of a vaguer description, plainly follows from the continuity of the animal series, and a comparison of the ganglionic consciousness of the Invertebrata with that of the independent ganglia and central parts of the spinal cord of the higher animals.

It is beyond a doubt that a mammal deprived of its brain is always capable of clearer feeling than an uninjured insect, because the consciousness of its spinal cord stands in any case higher than that of the ganglia of the insect. Accordingly this will, which gives evidence of itself in the independent functions of the spinal cord and the ganglia, is by no means to be at once declared to be in itself unconscious; we must rather provisionally assume that for the nerve-centres from which it proceeds it certainly may become more or less clearly conscious. On

the other hand, compared with the cerebral consciousness which a man exclusively recognises as *his* consciousness, it is certainly unconscious, and it is accordingly shown that *there exists in us an unconscious will*, since these nerve-centres are all contained in our corporeal organism, therefore in *us*.

It seems requisite to add, in conclusion, a remark with respect to the sense in which the word Will is here taken. We started with understanding by this word a conscious intention, which is the ordinary signification. We have found, however, in the course of our investigation, that in a single individual, but in different nerve-centres, there may exist consciousnesses and wills more or less independent of one another, each of which can *at the most* be conscious for the nerve-centre through which it is expressed. In saying this, the usual limited meaning of Will is necessarily abandoned; for I must now recognise another will *in me* than that which has been exerted through my brain, and has thereby become conscious to *me*. After these limitations of meaning have fallen away, we can no longer avoid understanding by Will the immanent cause of every movement in animals, which is not produced reflectorially. This may also be taken as the sole characteristic and infallible mark of the will of which we are conscious, that it is a *cause* of preconceived action. It is now seen, that it is somewhat *accidental to the will*, whether it passes through the *cerebral* consciousness or not; its essence remains thereby unaffected. What then in the present work is denoted by the word "Will" is no other than the same essential principle in both cases. If, however, it is particularly desired to distinguish the two kinds of will, for conscious will language already offers a term exactly covering this conception—Freewill—whilst the word Will must be retained for the general principle. Will, we know, is the resultant of all contemporaneous desires; if this struggle of desire is consciously waged, it appears as choice of the result, or freewill, whilst the origin of the unconscious will

is withdrawn from consciousness, consequently even the semblance of choice among desires cannot here occur. One sees from the existence of this term Freewill, that the idea of a more general will with *non-selected* content or aim, whose actions thus appear to consciousness not as free, but as inward compulsion, has long been in the popular consciousness.

I do not merely rely upon the precedent of Schopenhauer and the wide-spread acceptance (even abroad) that this use of the word Will has already found, but upon the fact, that no other word in general use in the Teutonic languages is more appropriate to designate the broad principle which is treated of in the present and following chapter. "*Desire*" is volition still incomplete, in the making, as it were, one-sided as not having yet stood the test of resisting other desires. It is only an unfinished product of the psychological laboratory of Volition, not the final collective expression of the activity of the whole individual (be it of higher or of lower order). It is only a *component* of the will, which, in consequence of being paralysed by other opposite desires, may be condemned to remain velleity. If "desiring" cannot be substituted for "willing," still less can "*Impulse;*" since it not only suffers from the same one-sidedness and limitation as desire, but does not even include the notion of actuality. It rather only represents the *latent disposition* to certain one-sided tendencies to action, which, if they become actual in consequence of some motive, are *no longer* called *impulse* but *desire*. Every impulse thus denotes a definite aspect, not of volition, but of the *character, i.e.*, the tendency of the latter to react on certain classes of motives with desires of a fixed direction (*e.g.*, sexual impulse, migratory impulse, acquisitive impulse, &c; *cf.* the phrenological "instincts" or "primitive faculties"). As specific predispositions the impulses rightly stand for inner springs of action, just as motives represent the outer ones. Impulse then, as such, has necessarily a definite concrete content, which is

conditioned by the physical predispositions of the general bodily constitution and the molecular constitution of the central nervous system. Will, on the other hand, as universal formal principle of movement and change, stands altogether *behind* the concrete dispositions, which, when conceived as informed by the will, are called impulses, and is realised in the resulting volition, which receives its particular content through the psychological mechanism of motives, impulses, and desires (*cf.* Chap. iv. B.) Although in the lower animals and in the subordinate central organs of man this mechanism is simple in comparison with that of the human brain, it is none the less present, and easily reveals itself in reflex movements. Even in the case of the independent functions of the spinal cord and ganglia the inherited innate material predisposition of the medulla oblongata to effect the respiratory movements may very well be called a "respiratory impulse," if only it be not forgotten that behind this material arrangement stands the principle of the will, without which it could as little be functional as, say, the innate cerebral disposition for compassion, and that the exercise of the respiratory movements themselves is an actual *willing*, whose direction and content is conditioned by such predisposition.

II.

UNCONSCIOUS IDEATION IN THE EXECUTION OF VOLUNTARY MOVEMENT.

I WILL to lift my little finger, and the finger is lifted. Does, then, my will directly move my finger? No; for if the brachial nerve be divided the will cannot move it. Experience teaches that for every movement there is only one part, namely, the central ending of the nerve-fibres concerned, which is able to carry into effect the volitional impulse for this particular movement of this particular member. Should this one part be injured, the will would have just as little power over the member, as it would have if the nervous communication between that place and the muscles were interrupted. The motor impulse itself we cannot, intensity apart, imagine to be different for different nerves; for since the excitation in all motor nerves is to be looked upon as homogeneous, it cannot be otherwise with the excitation at the centre, whence the current issues; consequently movements only differ in this, that the central endings of different motor nerves are affected by the volitional impulse, and thereby different muscles are constrained to contract. We may thus picture to ourselves the central termination of motor fibres in the brain as a kind of keyboard. The touch is, intensity apart, always the same; the touched keys alone are different. If, then, I intend a specific movement, *e.g.*, the lifting of the little finger, what is required is to compel those muscles to contract which by their combination produce this movement, and for that purpose to strike

with the will that chord in the keyboard of the brain, the single keys of which set the related muscles in motion. If in framing the chord one or more false keys are struck, there occurs a movement which does not correspond with the one intended; *e.g.*, in making a slip in speaking, miswriting, tripping, in the awkward handling of children, &c. It is true the number of the central endings of fibres in the brain is considerably smaller than that of the motor fibres in the nerves, provision being made through the intervention of a peculiar mechanism, to be further mentioned in Chap. V., for the simultaneous excitation of many peripheral fibres by means of one central fibre. However, the number of different movements within the power of the conscious will, consequently dirigible by the brain, is, by means of a thousand little modifications of direction and combination, for each single limb sufficiently large—for the whole body, indeed, simply immeasurable; so that the probability would be infinitely small that the conscious idea of the lifting of the little finger should, without causal connection, coincide with the actual elevation. The mere mental representation of the lifting of the little finger cannot act on the central nerve-endings, since they have nothing to do with one another; the mere will, however, as motor impulse, would be absolutely blind, and therefore the striking of the right key would be left to pure chance. If there were no causal connection at all, practice could avail nothing; for nobody finds in his consciousness an idea or a feeling of this infinite number of central endings. Thus, if accidentally once or twice the conscious idea of the lifting of the finger should coincide with the executed movement, experience would have nothing to go upon; and on the third occasion when the man willed to raise his finger, the touch of the right key would be as much left to chance as in the former cases. It is, then, clear that practice can aid the linking of intention and execution only if there be a causal nexus between the two, in which case certainly the passage from one to the

other is facilitated by repetition of the process. The problem placed before us, then, is to find the causal nexus; without it practice would be an empty word. It is, besides, in most cases not at all necessary, namely, in the case of almost all animals, which run and leap just as well at the first attempt as after long practice. From this it follows, in the second place, that all attempts at explanation are unsatisfactory, which intercalate such a causal link as can only be perceived by the accidental association of idea and movement. The conscious muscular feeling preceding the intended movement, for example, which can only be acquired and imprinted on the memory by repetition, might perhaps suffice for explanation in the case of man, but not for the far larger part of natural existences, the animals, since before any experience of muscular feeling they execute with marvellous accuracy the most extensive combined movements agreeably to the conscious idea of the end. For instance, an insect just born correctly alternates its six legs, as if locomotion were nothing new to it, and a young brood of partridges, hatched by a domestic hen in the stable, invariably, in spite of all precautions, immediately and correctly employ the motor muscles of their legs to reconquer freedom for their parents, and know how to use their beaks for picking up and crushing any insect they meet with, as if they had already performed the operation a hundred times.

It might perhaps be thought that the cerebral vibrations answering to the conscious idea, "I will to lift the little finger," occur in that region of the brain where the nerves have their central terminations; this is, however, anatomically incorrect, since the conscious ideas have their seat in the cerebrum, but the motor nerve-endings are found in the medulla oblongata or cerebellum. Just as little can a mechanical propagation of the vibrations of the conscious representation to the nerve-endings afford an explanation of the touching the right keys. We should then be obliged to assume that the con-

scious idea, "I will to move my little finger," is localised *elsewhere* in the cerebrum than the other conscious idea, "I will to move my fore-finger," and that each of the places in the cerebrum corresponding to a particular idea of any sort of movement to be executed stands, in virtue of an inherited mechanism, in intimate connection with the central ending of the motor nerves needed for realising these ideas, and with that alone. The consequences of this strange supposition would be stranger still; *e.g.*, the conscious idea, "I will to lift the five fingers of the right hand," would occur *simultaneously* in the five places of the cerebrum which are appropriated to the several ideas of the five liftings of the fingers; whereas one would be much more inclined to assume, that the ideas of willing to lift this or the other finger are distinguished in the material substratum of the brain rather by a small modification of the form of vibration than by definite localisation. Further, were it only the propagation of the molecular vibrations to the central endings of the motor nerves resulting from such a conscious idea, which sufficed for the performance of the movement, such a conscious idea as "I will to lift the little finger," should *always* call forth movement. With such a mechanism of fixed and isolated channels, not only would error be *impossible*, but also that indescribable impulse of the will would be superfluous, which, as experience teaches, must first *be added* to that conscious idea before an effect takes place. Lastly, where no mistake was possible, no increase of accuracy or certainty, as result of any influence whatever, would be conceivable; practice also could have no influence on the causal link between conscious idea and executed movement. This consequence, however, contradicts experience as much as the impossibility of error, and therefore discredits the hypothesis of a mechanical communication. Suppose, however, there really did exist such a mechanism, Materialism would be obliged further to assume that it is transmitted by inheritance, and was

gradually formed in our primitive ancestors by practice and habit. In this genetic theory, where a part of this mechanism comes into existence from time to time, the problem of a causal connection between conscious idea and execution of movement would again arise in the form in which we now have it—its possibility, to wit, *without the help* of an already existing mechanism for the given case. The theory of transmitting mechanisms would therefore only push our problem farther back, not *solve* it, and the *solution* given below would even then, if that theory were correct, be the only possible one.

Lastly, to return once more to the ascription of the muscular feeling of intended movement to the memory of earlier cases of casual association, this explanation is shown to be one-sided and insufficient, not only because at the best it could only claim to explain the possibility of exercise and perfection with an *already existing* causal connection, not the connection itself, but also because, in fact, it *does not even explain that*, but only pushes the problem one step farther back. Before it was not clear how the striking of the right brain-keys by the volitional impulse is to be effected through the idea of the lifting of the finger; now it is not clear, how this result is to be brought about by the idea of the muscular feeling in the finger and lower arm, since the one has as little to do with the position of the motor nerve-endings in the brain as the other, yet it is these which have to be affected if the right event is to take place. Of what direct use is an idea referring to the finger for the selection of the point to be excited in the brain by the will? That there exists an idea of the muscular feeling *sometimes*, but comparatively rarely, I do not at all deny; that if present it *may* be an important link in the chain terminating with movement, I just as little deny; but this I do deny, that for the comprehension of the sought-for union anything is gained by its intercalation,—the problem is only carried a little farther back. For the rest, this intercalation has the less importance, as

in the majority of cases where this muscular feeling at all exists prior to movement it exists *unconsciously*.

Let us once more gather up what we know concerning the problem, and the solution will press on us of itself. A will is given whose content is the conscious idea of the lifting of a finger, indispensable as means for executing a voluntary impulse at the fixed point P in the brain; required a method by which the voluntary impulse may strike precisely the point P and no other. The mechanical solution of a transmission of vibrations appeared impossible; practice before the problem was solved an empty, meaningless word; the interpolation of the muscular feeling as conscious causal middle term one-sided and no explanation. From the impossibility of a mechanical material solution it follows that the intermediate link must be of a spiritual nature; from the decided absence of a sufficient conscious link it follows that the same must be unconscious. From the necessity of a voluntary impulse at the point P it follows that the conscious will to lift the finger produces an unconscious will to excite the point P, in order, by means of the excitation of P, to attain the object, lifting the finger; and the content of the will to excite P, again, presupposes the unconscious idea of the point P (*cf.* Chap. iv. A.) The idea of the point P can, however, only consist in the idea of its position with reference to the other points of the brain, and herewith the problem is solved: "Every involuntary movement presupposes the unconscious idea of the position of the corresponding nerve-endings in the brain." Now also is it comprehensible how their dexterity is innate in the animals, the knowledge just spoken of and the skill to apply it being born with them, whilst man, in consequence of the immature and pulpy state of his brain at birth, only gradually, by long practice, succeeds in turning to good account his innate unconscious knowledge in accurate and powerful muscular innervation. It is now also intelligible how muscular feeling can sometimes appear as the con-

necting link. The excitation of this muscular feeling is related to the lifting of the finger as means to end, in such a way, however, that it is one step nearer to the idea of the excitation of the point P than the idea of the lifting of the finger. It is thus a medium which can be interpolated, but is better overleaped.

We may then regard it as established that every, even the slightest movement, whether due to conscious or unconscious intention, presupposes the unconscious idea of the appropriate central nerve-endings and the unconscious will to stimulate the same. We have accordingly made a great advance beyond the results of the first chapter. There (*cf.* pp. 68, 69) we only spoke of the relatively unconscious; there the reader was only to be accustomed to the thought that mental processes go on within him (as an indivisible spiritual-corporeal organism) of which *his* consciousness (*i.e.*, his cerebral consciousness) does not dream; here, however, we have come across mental events which, if they do not attain to consciousness in the brain, cannot certainly be conscious for the other nerve-centres of the organism: we have thus found something unconscious for the entire individual.

III.

THE UNCONSCIOUS IN INSTINCT.

Instinct is purposive action without consciousness of the purpose. No one would call Instinct purposive action accompanied by consciousness of the purpose, where therefore the action is a result of reflection; just as little a purposeless blind action, such as the furious outbursts of rabid or irritated animals. I do not think that the above definition can be objected to by those who assume the existence of instinct; but whoever thinks it possible to refer all actions usually called instinctive to conscious reflection does, in fact, deny instinct altogether, and ought accordingly to strike the word "instinct" out of his vocabulary. But of this later on.

First of all, assuming the existence of instinctive actions in the sense of the definition, they might be explained: (1.) As a mere consequence of corporeal organisation; (2.) as a cerebral or mental mechanism contrived by Nature; (3.) as a result of unconscious mental activity. In the first two cases the idea of purpose lies far back; in the last it immediately precedes action. In the first two an arrangement given once for all is used as means, and purpose is only once concerned in constituting this arrangement; in the latter, the end is imagined in every single case. Let us take the three cases in order.

Instinct is *not the mere result of bodily organisation*, for: (*a.*) *Instincts are quite different with similar bodily structures.* All spiders have the same spinning apparatus, but one kind constructs its web radially, another in an

irregular manner; a third does not construct a web at all, but lives in hollows, over the walls of which it spins, closing the entrance with a door. Almost all birds have essentially the same organisation for building nests (beak and feet), and how infinitely diverse are their nests in form, architecture, mode of fastening (standing, clinging, hanging), locality (caves, holes, corners, forked branches, shrubs, the ground), and excellence, how different often in the species of the same genus, *e.g.*, *Parus* (titmouse). Several birds do not build nests at all. Most birds with webbed feet swim, but some not, *e.g.*, upland geese, which seldom or never enter the water, or the frigate-bird, which is always hovering in the air, and which no one except Audubon has ever seen alight on the surface of the sea. Just as little do the different varieties of the song of birds depend on the difference in their vocal organs, or the peculiar architecture of bees and ants on their bodily organisation; in all these cases the organisation only capacitates for singing or building *in general*, but has nothing to do with the mode of execution. Sexual selection, likewise, has nothing to do with organisation, since the disposition of the sexual organs in any animal would be as well adapted for the members of numberless foreign species as for an individual of its own species. The nurture, protection, and training of the young can still less be considered dependent on the bodily structure. The same may be said of the place where the insect lays its eggs, or the selection of the spawn of their own kind on which the male fish discharge their seed. The rabbit burrows, but not the hare with similar organs for digging, but it less needs a subterranean place of refuge on account of its greater speed. Some birds that fly remarkably well are stationary birds (*e.g.*, kites and other birds of prey), and many moderate flyers (*e.g.*, swallows) take the longest journeys.

(*b.*) *The same instincts appear with different organisations.* Birds with and without climbing feet, monkeys with and without prehensile tails, squirrel, sloth, puma, &c., live

on trees. The Mole-Cricket burrows with the prominent fossorial organs of its anterior extremities, the Burying Beetle digs without any arrangement for the purpose. The Hamster carries in its winter stores with its cheek-pouches, 3 centim. long and 1½ centim. broad, the field-mouse does the same without any special apparatus. Birds live in the water just as well without as with web feet; at any rate, Divers (*Podiceps*) and Waders (*Fulica*) are excellent aquatic birds, although their toes are only fringed by a web. Birds with elongated tarsus and long unconnected toes are for the most part marsh-birds, but with the same structure of the feet the Moor-hen (*Ortygometra*) is almost as much an aquatic bird as the Water-hen, and the Crake (*Crex*) is almost as much a land-bird as the quail or the partridge. The migratory impulse is manifested with equal intensity by animals of the most different orders, and irrespective of the outfit with which they undertake their journey by water, land, or air.

It must accordingly be admitted that Instinct is in a high degree independent of bodily organisation. That a certain kind of bodily organisation is *conditio sine qua non* of its manifestation is a matter of course; for without sexual parts no procreation, without certain appropriate organs no artificial construction, without spinning no spinning; but in spite of this no one can say that organisation is the *cause* of instinct. The mere existence of an organ does *not* furnish *the slightest motive* for the exercise of a corresponding activity; for that there must be *at least* a feeling of pleasure in the use of the organ; this may then serve as motive to action. But even then, if the agreeable feeling affords an incentive to action, only the *that*, not the *how*, of this activity is determined by the organisation. The law of action, however, is precisely that which constitutes the problem to be solved. Nobody would call it instinct if the spider caused the secretion to flow from its over-filled spinning-glands in order to procure the satisfaction of the discharge, or

if the fish for the same reason simply discharged its seed into the water. The instinct and the marvel consist in this, that the spider spins threads and makes the threads into a web, and that the fish discharges its seed only on the eggs of its own species. Lastly, the agreeable sensation in the use of the organs is an altogether insufficient motive for the activity itself; for what is at once grand and awe-inspiring in instinct is, that its behests are obeyed with utter disregard of all personal well-being, even at the cost of life itself. Were merely the pleasant feeling of the emptying of the spinning glands the motive why the caterpillar spins, it would only continue to spin till its glandular sac was emptied, but it would not perpetually repair a continually destroyed web till it died of exhaustion. It is just the same with all other instincts, the causes of which are apparently personal pleasure. As soon as the circumstances are altered, so that in place of individual weal individual sacrifice occurs, their higher origin is unmistakably shown. Thus, *e.g.*, it might be said that birds tread for the sake of sexual enjoyment, but why then do they no longer repeat the treading when the proper number of eggs is laid? The sexual impulse still exists, for, if an egg be taken from the nest, [redacted]commence treading and the hen lays another egg, or, if they belong to the cleverer birds, they quit the nest and rear a fresh brood. A hen of *Ignex torquilla* (Wryneck), whose deposited egg was continually removed from the nest, kept on laying, each egg being smaller than the preceding, until at the twenty-ninth egg the bird was found dead in the nest. If an instinct does not stand the test of a sacrifice imposed at the cost of individual well-being, if it really merely proceeds from the endeavour after bodily pleasure, it is not true instinct, and can only be so deemed by mistake.

Instinct is not a cerebral or mental mechanism implanted by Nature, so that the instinctive action could be executed without individual (if also unconscious) mental activity,

and without an idea of the purpose of the action, after the manner of a machine,—the end being conceived once for all by Nature or a Providence, which had so contrived the psychical organisation that only a mechanical use of the means remained to the individual. The suggestion now is, that a psychical, not a physical, organisation is the cause of instinct. This explanation would be at once acceptable, if any instinct appertaining to an animal *were functional without intermission.* This is not true, however, of any instinct, for each waits upon a motive; which, according to our view, signifies the occurrence of appropriate external circumstances making possible the attainment of the end by those means which instinct wills; not till then is instinct functional as actual will, with action at its heels; before the motive is present, instinct remains latent, as it were, and is not functional. The motive appears in the mind in the form of sensuous presentation, and the connection is constant between the active instinct and all sense-perceptions, which indicate that the opportunity has arrived for the attainment of the purpose of the instinct. The psychical mechanism would accordingly have to be sought in this constant connection. We should again have to imagine a sort of keyboard; the struck keys would be the motives, and the resounding notes the functional instincts. This might be satisfactory in spite of the remarkable fact that keys altogether different give out the same sound, if only instinct were really comparable to definite tones, *i.e.*, if one and the same instinct really always reacted in one and the same way on the appropriate motives. This, however, is not the case, but the only constant element is the unconscious *purpose* of the instinct; the instinct itself, however, like the willing of the *means*, varies just as much as the means to be appropriately applied vary according to the external circumstances. An hypothesis which rejects the unconscious idea of the end in each single case is accordingly condemned; for if it were desired to retain in

addition the idea of this mental mechanism, for every variation and modification of the instinct a special constant arrangement according to external circumstances, a new key with a tone of another timbre would have to be inserted, whereby the mechanism would be infinitely complicated. That, however, with every variation in the means selected by instinct the end is constant should be a sufficiently clear indication, that such an endless mental complexity is not needed, but in lieu thereof the unconscious representation of an end is all that need be assumed.

Thus, *e.g.*, for the bird which has laid its eggs, the constant end is to hatch the chickens; accordingly, if the external temperature is insufficient, it sits upon them, a proceeding omitted only in very warm countries, because the animal sees the goal of its instinct attained without its assistance. In warm countries many birds only brood by night. With us, too, if by chance small birds have made their nests in hot forcing-houses, they sit but little or not at all. How repugnant is the supposition of a mechanism which constrains the bird to brood as soon as the temperature falls below a certain degree; how simple and clear the assumption of an unconscious purpose which compels the willing of the appropriate means, but of which process only the final term, as a will immediately preceding action, comes into consciousness! In South Africa the sparrow begirds its nest with thorns as a protection against snakes and apes. The eggs laid by the cuckoo always resemble in size, colour, and marking the eggs of the nest wherein they are laid; *e.g.*, in that of *Sylvia rufa*, they are white with violet spots; of *Sylvia hippolais*, rose-coloured with black spots; of *Regulus ignicapellus*, dark red; and the resemblance is so perfect that the eggs are scarcely to be distinguished save by the structure of the shell. And yet Brehm enumerates some fifty species of birds in whose nests cuckoos' eggs were found (Illustrirtes Thierleben, vol. iv. p. 197). Only through an oversight, when the cuckoo is

surprised, is an egg ever deposited in a wrong nest, as well as occasionally left to perish on the ground, if the mother was unable to find a suitable nest at the right time.—Huber by special contrivances prevented bees from carrying on their instinctive mode of building from above downwards, whereupon they built from below upwards, and even horizontally. Where the outermost cells are attached to the roof of the hive or lean against the wall, the prisms, which are agglutinated together by their base alone, are not hexagonal but pentagonal, for more durable fastening. In autumn bees lengthen the existing honey cells, if there are not enough of them; in spring they shorten them again in order to obtain broader passages between the combs. If the honeycombs have become too heavy, they replace the waxen walls of the highest (supporting) cells by thicker ones, formed of wax and propolis. If working-bees are introduced into the cells destined for drones, the workers apply the corresponding flat rooflets instead of the round ones belonging to the drones. In the autumn they regularly kill the drones, but allow them to live if the queen is lost, that they may impregnate the young queen which is to be reared from the larvæ of female workers. Huber observed that they barred the entrance of their hive against raids of hawk-moths with artificial constructions of wax and propolis; they only carry in propolis when they want to make any improvements or for special purposes. Spiders and caterpillars also show a remarkable skill in repairing their ruined web, which is quite a different kind of work from the first manufacture of a web.

The examples cited, which might be indefinitely added to, sufficiently prove that instincts are not actions mechanically performed in accordance with fixed rules, but that they are rather very closely adapted to circumstances, and are capable of such great modifications and variations, that they sometimes seem to be converted into their opposites. Many will be inclined to ascribe this modification to *con-*

scious reflection on the part of the animals; and certainly in animals more highly endowed in most cases a combination of instinctive activity and conscious reflection is not to be denied. However, I believe that the examples adduced satisfactorily prove that there are also many cases where, without any intervention of conscious reflection, the ordinary and extraordinary actions arise from the same source; that they are either both true instinct or both results of conscious reflection. Or is it really a different power which causes the bee to build in the middle hexagonal, at the edge pentagonal prisms; which leads the bird to brood over its eggs in the one set of circumstances, and not to brood in the other set; which causes the bees now pitilessly to murder their brethren, now to give them their life; which teaches birds the architecture of their species and their special measures of precaution; which leads the spider to spin its web, and mend it when injured? If it be granted that the modifications of instinct, together with its most usual fundamental form, which is often quite *indeterminable*, spring from a single source, then the allegation of conscious reflection is self-refuted later on, where the same objection is brought against instinct in general. It may, perhaps, not be improper to anticipate here the conclusion of a subsequent chapter, namely, that instinct and organic formative activity contain one and the same principle, only manifested under different circumstances, and that they shade into one another without any definite boundaries. Admit this, and it is evident that instinct cannot depend on the organisation of the body or of the brain, since it would be much more correct to say that organisation arises through a manifestation of instinct. This, however, only by the way.—

On the other hand, we have now to direct our attention again more closely to the notion of a psychical mechanism, when it will appear that, apart from the fact that it explains very little, it is so obscure that it hardly

conveys any idea at all. The motive appears in the mind in the form of a conscious sensuous presentation. This is the first term of the process; the last term appears as conscious will to some particular action. Both, however, are quite heterogeneous, and have nothing in common with ordinary motivation, which consists exclusively in this—that the idea of pleasure or displeasure begets the desire to attain the former and avoid the latter. In instinct, pleasure, for the most part, appears as a concomitant phenomenon, although, as we have already seen, it is not at all necessary; but the full power and grandeur of instinct is only shown in the *sacrifice* of the individual. But the real problem is here a far deeper one, for every *idea* of a pleasure presupposes that this pleasure has been already *experienced*. It follows again from this that in the former case a will was present, in the satisfaction of which pleasure consisted, and whence the will comes *before* the pleasure is known, and without a bodily pain, as in the case of hunger, urgently demanding relief, is the very question, since one may see in the case of any solitary animal that the instinctive impulses appear before it can have got to know the pleasure of their satisfaction. In instinct there must, therefore, be a causal connection between the sensuous presentation which serves as motive and the will to act instinctively, with which the pleasure of the satisfaction that follows has nothing to do. This causal connection, as we know from our human instincts, does not enter experientially into consciousness; consequently, if it is to be styled a mechanism, it can only be either a (non-conscious) mechanical conduction and conversion of the vibrations of the presented motive into the vibrations of the willed action in the *brain*, or an unconscious *mental* mechanism. In the first case, it would be very wonderful that this transaction should remain unconscious, since the process is so powerful that the will resulting from it overcomes all other considerations, every other will, and such cerebral vibrations always become conscious.

It is also difficult to form an idea of the way in which this conversion could take place, so that the end set up once for all should be attained by the resulting will with the varying circumstances. If the other case,—an unconscious mental mechanism,—be assumed, the process cannot well be conceived under any other form than that which holds good of mind in general, thinking and willing. Between the conscious motive and the will to the instinctive action a causal connection has to be imagined by means of unconscious ideation and volition, and I know not how this connection can be *more simply* conceived than by represented and willed *purpose*. We have now reached the mechanism peculiar to mind, and immanent of *Logic*, and have found *the unconscious idea of purpose* to be the indispensable link *in the case of each single instinctive action*. Accordingly, the notion of a dead, external, preordained mental mechanism is abolished of itself, and changed into the immanent mental life of Logic ; and we have reached the only remaining mode of conceiving a real instinct: *Instinct is conscious willing of the means to an unconsciously willed end*. This conception explains in an unforced and simple way the whole problem offered by instinct, or, more correctly, in thus declaring the true nature of instinct everything problematical vanishes. In a separate essay on Instinct, the notion of unconscious mental activity, as yet unfamiliar to our educated public, would perhaps arouse opposition ; but here, where in each chapter new facts are adduced, proving the existence of this unconscious mental activity and its striking significance, any scruple due to the novelty of this thought will be evanescent.

Although compelled decidedly to reject the notion that instinct is merely the action of a pre-arranged mechanism, I did not at all intend to exclude the supposition of constitutional tendencies of the brain, of the ganglia, and of the body as a whole, determining the nervous current *more easily and more conveniently* into *one* channel rather than into *another*. This predisposition is then either a

result of habit, graving its lines deeper and deeper, and at last leaving indelible traces behind it, either in the special individual or by inheritance in a series of generations, or it is expressly called forth by the unconscious formative impulse, in order to facilitate action in a particular direction. The latter case will have more application to the external organisation—*e.g.*, the weapons and working implements of animals—the former more to the molecular constitution of brain and ganglia, especially in respect to the ever-recurring fundamental power of instinct—*e.g.*, the hexagonal form of the cell of the bee. We shall see later on (B. Chap. iv.) that the sum of individual modes of reaction on all possible kinds of motives is called the individual character, and, (C. Chap. xi. 2) that this character is essentially dependent on a constitution of brain and body in lesser degree acquired by the individual by habit, in greater part inherited. Since, now, in the case of instinct, we have to do with a mode of reaction on certain motives, we may speak here too of character, although we are not so much concerned with the character of the individual as of the race. Accordingly, in the case of character in respect of instinct, the question is not how one individual is distinguished from another, but how one animal class is distinguished from another.

If such a predisposition of brain and body for certain active tendencies be called a mechanism, in a certain sense that may be allowed to pass; but it should be remarked: (1.) that all deviations from the customary form of any instinct, so far as they cannot be ascribed to conscious reflection, are *not* specifically provided for in this mechanism; (2.) that *inheritance* is only possible through the continual guidance of the embryonic development by a well-adjusted unconscious formative activity (certainly again influenced by the predispositions given in the germ); (3.) that the engraining of the tendency in the transmitting individual could only take place by long habituation

to the same mode of action, accordingly *instinct without auxiliary mechanism is the cause of the origin* of the auxiliary mechanism; (4.) that all instinctive actions which only occur rarely or merely *once* in the lifetime of an individual (*e.g.*, those relative to propagation and metamorphosis in the case of the lower animals, and all such instinctive forbearance when a contrary effect would be followed by death) cannot well be engrained by habit, but a ganglionic constitution predisposing thereto could only be produced by purposive creation; (5.) that even the ready-made auxiliary mechanisn does not precisely *necessitate*, but merely *predisposes* the Unconscious to this particular instinctive action (as is shown by deviations from the type), so that the unconscious purpose always remains stronger than the ganglionic predisposition, and only finds occasion to choose among the means lying ready to hand those nearest and most suitable to the constitution.

We now approach more closely the question we have reserved to the last: "Is there such a thing as a true instinct, or are the so-called instinctive actions only results of conscious premeditation?". In favour of the latter hypothesis there might be cited the well-known experience that the more limited the range of the conscious mental activities of any being, the stronger is wont to be the executive faculty in the particular limited direction relatively to the extent of the total capacity. This experience, frequently confirmed in the case of man, and certainly applicable to animals also, finds its explanation in the circumstance that the degree of this performance is only in part dependent on the mental structure, in part also, however, on the exercise and improvement of the natural disposition in this special direction. Thus, *e.g.*, a philologist is unskilful in legal processes of thinking, a naturalist or mathematician in philological, an abstract philosopher in poetic invention, quite apart from special talent, solely in consequence of one-sided mental cultivation and practice. Now the narrower the sphere of the

mental activity of any being, the more is the whole culture and training concentrated in this single direction, consequently it is no wonder that the resulting performances in this line are enhanced through the narrowing of the field of view *relatively to the total capacity.* But if this phenomenon be used to explain the action of instinct, the limitation "relatively to the total capacity" must not be left out of sight. Since, however, the lower the rank in the animal scale the less the total capacity, and yet the instinctive performances remain in respect to perfection tolerably equal at all stages of the animal kingdom, whereas those effects which unquestionably proceed from conscious reflection are manifestly proportional to the mental capacity, it seems to follow that in the case of instinct we have to do with some other principle than conscious understanding. We further see that the conscious performances of animals are in fact similar in kind to our own; that they are made possible through teaching and instruction and are perfected by exercise. Even in the case of animals it is said understanding only comes with years. On the other hand, in the case of instinctive actions, the peculiarity is just this, that they are performed just as perfectly by animals growing up in solitude as by such as have enjoyed the instruction of their parents, and that the success is as great on the very first occasion, prior to all experience and exercise, as at any later period. Here too, the difference in principle is unmistakable. Then experience teaches: the more limited and weak an understanding, the more sluggish the flow of ideas, *i.e.*, the slower and heavier its conscious thinking. This is illustrated both by human beings of different mental grasp and by the brutes, so far as instinct does not come into play. But instinct has this peculiarity, that it never delays and hesitates, but instantaneously operates, if the motive for its operation consciously occurs. This rapidity of resolution in instinctive action is met with alike in the lowest and in the highest animals. This is another

circumstance pointing to a difference in principle of instinct and conscious reflection.

Lastly, as concerns the pitch of performance, a hurried glance at once detects the want of proportion between the same and the stage of mental development. Look at the caterpillar of the Emperor Moth (*Saturnia pavonia minor*). It devours the leaves of the shrub whereon it was hatched; at the most, moves when it rains to the underside of the leaf, and changes its skin from time to time; that is its whole life, which hardly allows one to look for even the most limited education of the intelligence. But now it spins its cocoon for the chrysalis state, and constructs for itself a double arch of bristles meeting at their apices, very easy to open from within, but which opposes on the outside sufficient resistance to any attempts to penetrate into it. If this contrivance were a result of its conscious understanding, it would require the following train of thought: "I shall enter the chrysalis state, and, immovable as I am, be at the mercy of every adversary; therefore I will spin myself a cocoon. Since, however, as butterfly I shall not be able to make a breach in the web either by mechanical or chemical means as many other caterpillars do, I must leave an aperture for egress; but that my persecutors may not make use of it, I shall close it with elastic bristles, which I can easily bend apart from the inside, but which will offer resistance externally, according to the theory of the arch." That is really asking too much of the poor caterpillar! And yet each step of this argumentation is indispensable if the result is to be correctly got at.

This theoretical discrimination of Instinct from the conscious activity of the understanding could easily be misinterpreted by the opponents of my way of regarding the matter, as if I asserted a wide gulf to exist between the two in practice likewise. The latter, however, is by no means my opinion; on the contrary, I have already pointed to the possibility of both kinds of psychical activity

being combined in different proportions, so that through their intermixtures in different degrees, there occurs a gradual transition from pure instinct to pure conscious reflection. We shall, however, see later on (B. Chap. vii.) that even in the highest and most abstract rational activity of the human consciousness there are certain factors of the highest importance, which essentially agree with that of instinct.

On the other side, however, the most wonderful manifestations of instinct not only occur in the vegetable kingdom (as we shall see in C. Chap. iv.), but also in those lowest organisms of the simplest structure, in part unicellular, which in any case stand far below the higher plants in conscious intelligence, but to which such a power is usually denied. If in such microscopic unicellular organisms, in respect of which the question whether they are of animal or of vegetable nature is devoid of meaning, we must admire instinctive adjustments which far exceed merely reflectorially stimulated movements, then every doubt must be laid to rest, whether there really exists an instinct, the derivation of which from conscious rational activity appears radically hopeless. I adduce as an example a recently observed phenomenon, which is perhaps more astonishing than anything previously recognised, because the problem is therein solved of accomplishing, with incredibly simple means, various ends to which in higher animals a complicated system of motor organs is subservient.

Arcella vulgaris is a lump of protoplasm in a concavo-convex, brown, finely perforated shell, from the concave side of which it protrudes through a circular opening, by means of processes (pseudopodia). If a drop of water, containing living arcellæ be observed through a microscope, a specimen may usually be seen accidentally lying on its back at the bottom of the drop of water, making vain efforts for one or two minutes to grasp a firm point with its pseudopodia. Then there suddenly appear generally

from two to five, sometimes even more, dark specks in the protoplasm at a mean distance from the periphery, and usually at regular intervals from each other, which are quickly enlarged to distinct spherical air-bubbles, and at last fill a respectable part of the hollow of the shell, thereby thrusting out a portion of the protoplasm. The number and size of the several bubbles are in inverse proportion. After five to twenty minutes the specific gravity of the Arcella is so far reduced that the animalcule, lifted from the water by its pseudopodia, is carried towards the upper surface of the drop, on which it now walks. Then after five to ten minutes the bubbles disappear, the last little speck by jerks, as it were. If, however, as the result of an accidental twist, the Arcella comes up to the surface of the drop, the vesicles continue to grow, but only on one side, becoming smaller on the other; in consequence of which the shell assumes a position more and more oblique, and at last vertical, until finally one of the processes takes firm hold, and the whole turns over. From the moment that the animal gains a firm footing the vesicles become smaller, and the experiment may be repeated as often as it pleases after their disappearance. The places of the protoplasm which form the bubbles continually change; the non-nucleated protoplasm of the pseudopodia alone does not contain air. With longer fruitless endeavours there occurs visible exhaustion; the animal abandons the attempt for a time, and renews it after a pause for refreshment. Engelmann, the discoverer of this phenomenon, says (Pflüger's Archiv für Physiologie, vol. ii.): "The changes of volume usually take place in all air-bubbles of the same animal simultaneously, in the same way and in the same degree. There are, however, not a few exceptions. Frequently some grow or diminish much quicker than others. It may even happen that one air-bubble becomes smaller while another increases. *All* these changes are *throughout perfectly adapted to their end.* The formation and growth of the air-bubbles has for object

the bringing the animal into such a position that it can maintain itself by means of its pseudopodia. When this end is attained the air disappears, without our being in a position to discover any other reason for this disappearance. . . . If these circumstances be taken note of, it is possible, with almost complete certainty, to foretell whether an Arcella will develop air-bubbles or not, and, in case gas-bubbles are already in existence, whether they will expand or become smaller. . . . In the power of changing their specific gravity the Arcellæ possess a remarkable expedient for rising to the surface of the water or for settling at the bottom. They not only avail themselves of these means under the abnormal circumstances in which they find themselves during microscopic investigation, but also under normal circumstances. This is concluded from the fact that at the surface of the water, where they live, a few specimens are always found to contain air-bubbles."—

Those whom the foregoing instances do not constrain to reject the explanation of instinct by conscious reflection must admit the demonstrative force of the following highly important testimony of facts. Thus much is certain, that the reflection of conscious understanding can only take into account such data as are given in consciousness; if, then, it can be definitely proved that data *indispensable* for the result *cannot possibly be consciously known*, it is thereby proved that the result cannot spring from conscious deliberation. The only way, according to the common assumption, whereby the knowledge of external facts can be obtained is sensuous perception; we have then to show that knowledge indispensable to the result cannot possibly be obtained by means of sensuous perception. The following are the points to be proved: Firstly, that the facts in question belong to the future, and all data are wanting in the present circumstances wherefrom to infer their occurrence in the future; secondly, that the facts in question do indeed exist at the present

time, but are manifestly closed to conscious apprehension by the circumstance, that only the experience of former cases can supply material for the interpretation of the data afforded by sensuous perception, and this experience, so observation shows, is excluded. It would make no difference, as far as our argument is concerned, if, as I hold to be probable, in the progress of physiological knowledge, all examples about to be cited for the first case should turn out to belong to the second, as has undeniably happened with many examples formerly adduced. For an *à priori* knowledge without *any* appulse from the side of sense is hardly to be called more wonderful than a knowledge which is evinced, indeed, *on occasion of* certain sensuous perceptions, but can only be conceived to be connected therewith by such a chain of inferences and applied knowledge, that its possibility must be decidedly denied in the state of the faculties and development of the particular animals.—An example of the first case is afforded by the instance of the larva of the Stag-beetle in digging for itself a suitable cavity, on occasion of passing into the chrysalis state. The female larva digs a hole as large as itself; the male, however, though of the same size, one as large again, because the horns which will hereafter be developed are about the length of the animal. The knowledge of this circumstance is indispensable to the result, and yet every indication is wanting at the time whereby to infer this future event. The following is an example of the second case:—Ferrets and buzzards fall upon blind-worms or other non-poisonous snakes without more ado, and seize them just as they come in their way; the adder however, even if they have never seen one before, they grasp with the greatest circumspection, and try first of all to crush its head, in order to avoid being bitten. Since there exists nothing else capable of inspiring fear in the adder, if this behaviour is to proceed from conscious reflection, the conscious knowledge of the dangerous char-

acter of its bite is indispensable. But now, as this can only be gained by experience, and yet the same precaution is observed by animals that have been kept in confinement from their birth, it cannot proceed from reflection. On the other hand, there evidently follows from these two examples the fact of an unconscious cognition of particular circumstances, the existence of an immediate knowledge without the intervention of sensuous perception and consciousness.

This has always been recognised and indicated by the words fore-feeling and presentiment. But, on the one hand, these terms have reference only to the future, not to that which exists at the present time but is imperceptible owing to its remoteness; on the other, they denote only the slight, vague, undefined resonance in consciousness of the unerring and sure state of unconscious knowledge. Accordingly, the word *fore-feeling* is appropriate so far as vagueness and indefiniteness are suggested, whilst at the same time it is easy to see that no mere feeling devoid of all, even unconscious ideas, can have any influence on the result, but only a mental representation, since this alone contains knowledge. The presentiment reverberating in consciousness may certainly, in certain circumstances, be tolerably distinct, so that among human beings it can be fixed in thoughts and words; but even in man, as our experience teaches us, this is not the case with the instincts proper, for in their case the resonance of unconscious knowledge in consciousness is mostly so weak as to be actually expressed only in accompanying *feelings* or *moods*, and to form only an infinitely small fraction of common feeling. That such an obscure sympathy on the part of consciousness is quite insufficient to give the cue to conscious reflection is evident. On the other hand, it is also clear that conscious reflection would be superfluous, since the particular rational process must have been already unconsciously performed; for every vague presentiment in consciousness is only the consequence of a

definite unconscious knowledge, and the knowledge, of which we are here speaking, is almost always the idea of the purpose of the instinctive action, or one closely connected therewith. *E.g.*, in the case of the larva of the Stag-beetle, the aim is to have room for the two sprouting horns; the means, to procure room by excavation; the unconscious perception, the future growth of the two horns. Lastly, all instinctive actions give the impression of *absolute certainty* and *self-assurance*, and there never occurs in them, as in conscious resolution, any *delay*, *doubt*, or *hesitation*, never (as will be shown in C. Chap. i.) any genuine *error*, so that one cannot possibly ascribe to the obscure nature of the presentiment such an *invariable precise* result; indeed this feature of absolute accuracy is so characteristic, that it may pass for the only clear defining mark of action from instinct when compared with action from conscious reflection. From this, however, it again follows that a principle altogether different from that which underlies conscious action must be at the bottom of instinct, and that can only be found in the determination of the will by a process lying in the Unconscious, for which this character of undoubted self-assurance is claimed in *all the following inquiries.*

Some may be surprised that I have ascribed to instinct an unconscious knowledge, produced by no sensible experience, and yet unerring; but this is no consequence of my view of Instinct, but rather a strong support of this view, derived directly from the facts. Accordingly we cannot be spared the trouble of considering a number of examples illustrative of this point. In order to be able to use a single word for the unconscious knowledge, which has not been acquired by way of sensuous perception, but is met with as an immediate possession, I shall (as "presentiment," for the reasons assigned, is not suitable) employ the term "clairvoyance," which, it must be clearly understood, will here only have the force of the given definition.

Let us now consider in order a few examples from the

instincts of fear of enemies, appetence, the migratory impulse, and propagation. — Most animals know their natural enemies before any experience of their hostile intentions. Thus a flock of young pigeons becomes alarmed, even without an older guide, and scatters if a bird of prey approaches. Oxen and horses, indigenous in regions where there are no lions, no sooner scent a nocturnal prowler than they become restless and anxious. Horses, on crossing a bridle-path which ran past the old house of the beasts of prey of the Berlin Zoological Garden, were wont to become terrified and restless on scenting their wholly unknown enemies. Sticklebacks swim quietly about among the rapacious pikes, which do not attempt to attack them; for if by oversight a pike ever actually attempts to swallow a stickleback, the latter with its projecting dorsal spines sticks in his throat, and the pike must infallibly die of hunger; accordingly cannot transmit his painful experience to posterity. The foresight of the ferret and buzzard in regard to adders has been already mentioned; similarly it was observed that a young Honey-buzzard, on being presented with its first wasp, only devoured the animal after it had crushed the sting out of its body. In some countries the people live chiefly on dog's flesh. Dogs in the presence of these people are said to become quite wild and ungovernable, as if they recognised in them foes whom they would like to attack. This is the more remarkable, as dog's fat outwardly applied (*e.g.*, rubbed on the shoes), attracts dogs by its smell. A young chimpanzee, at the first sight of a gigantic snake, was observed by Grant to fall into the greatest alarm; and even among us human beings, too, it is not so rare for a Gretchen to spy out a Mephistopheles. Very remarkable is it that the insect Bombex attacks and slays a Parnope wherever it finds one, without making any use of the corpse. We know, however, that the latter lies in wait for the eggs of the Bombex, and is therefore the natural foe of its race. The phenomenon well known

to the tenders of oxen and sheep as "the goading of cattle by the gadfly" furnishes analogous evidence. If a "breeze" or gadfly approaches a herd, the latter become quite wild and run hither and thither in confusion as if beside themselves, because the hatched larvæ from the eggs of the fly deposited on their hide penetrate the skin and cause painful festerings. These gadflies, which have no sting, very much resemble the stinging gadflies, and yet the latter are but slightly, the former extremely, feared by cattle. As the consequences of the painless deposition of the eggs only make their appearance after a considerable lapse of time, a conscious inference of the connection cannot be assumed.

No animal, whose instinct has not been killed out by unnatural habits, eats poisonous herbs; even the ape, spoiled by residence among men, may with safety be employed in the primitive forests as a fruit-taster, as it rejects with a cry the poisonous fruits which are offered it. Every animal chooses just those vegetable or animal substances for its food which suit its digestive organs, without having received any instruction on the matter, even without a previous use of the organ of taste. If now it must certainly be assumed that smell, and not sight, is the critical organ for the discrimination of materials, still it is no less enigmatical how the animal recognises that which suits its digestion by odorous rather than by visual impression. Thus the kid cut from the womb by Galen enjoyed milk alone of all the proffered food and drink, refusing to touch aught else. The Hawfinch splits the cherry-stone by turning it in such a way that the beak exactly hits the suture, and it does this as well with its first cherry-stone as with its last. Finches, martens, and weasels make little holes on the opposite side of the egg about to be drained of its contents, that the air may rush in and facilitate suction. Animals not merely know their proper food, but also often seek appropriate remedies with correct personal diagnosis and unacquired therapeutic

knowledge. Thus dogs often eat a good deal of grass, especially couchgrass, when they are sick; as, for instance, according to Lenz, when they are afflicted with worms, which are evacuated enveloped in the undigested grass, or if they want to remove splinters of bone from their stomach. They make use of thorny rest-harrows as laxatives. Fowls and pigeons pick lime from walls and roofs if their food does not afford enough lime to form egg-shells. Little children eat chalk when they have heartburn, and pieces of charcoal if they suffer from flatulence. We also find, under certain circumstances, these special nutritive or curative instincts in adult human beings when unconscious nature gains the upper hand, *e.g.*, among the pregnant, whose capricious appetites probably make their appearance, when a certain state of the fœtus renders a particular composition of blood desirable. Field-mice bite out the germs of the gathered grain, that they may not sprout in winter.

A few days before the coming of cold weather the squirrel gets in its stores most diligently, and. then closes its dwelling. The birds of passage go from our regions to warmer lands at a time when they have no lack of food, and when the temperature is considerably higher than at the period of their return; the like holds good of the time when animals go into winter quarters, which beetles frequently do in the warmest days of autumn. When swallows and storks find their way home again, travelling hundreds of miles over lands totally different in appearance, it is ascribed to the keenness of their sense of locality; but when pigeons and dogs, after having been turned round twenty times in a sack and carried off to an unknown region, nevertheless run home in a straight line, no one can say anything more than that their instinct has guided them, *i.e.*, the clairvoyance of the Unconscious has enabled them to divine the right path. In years when there will be an early winter, most birds of passage begin to make preparations for their departure sooner than usual. If a

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very mild winter is imminent, many species do not depart at all, or migrate only a short distance southwards. If a severe winter occurs, the tortoise makes its winter abode deeper. If grey geese, cranes, &c., soon withdraw from the spots in which they had made their appearance at the beginning of spring, there is a prospect of a hot and dry summer, when the deficiency of water in those places would render breeding impossible to marsh and water birds. In years when floods occur, the beaver builds its dwelling higher; and in Kamtchatka, when a flood is imminent, the field-mice suddenly withdraw in a body. If a dry summer is approaching, in April or May spiders weave their pensile toils several feet in length. When in winter house-spiders run to and fro, boldly contend with one another, construct new and numerous webs one over another, cold will set in in from nine to twelve days; on the other hand, if they conceal themselves, there will be a thaw.

I do not by any means doubt, that many of these precautionary measures in view of future states of the weather are conditioned by a sensitive appreciation of certain present atmospheric states, which escape our notice; these perceptions, however, invariably have reference only to present states of the weather, and what can the conscious common sensations produced by the present state of the weather have to do with the idea of the future weather? Surely no one will credit the animals with the power of *calculating* the weather months in advance from meteorological indications, and with the faculty of foreseeing floods. A mere feeling of this kind of present atmospheric influences is nothing more than the sensuous perception which serves as motive, for a motive must, indeed, always be present if an instinct is to become active.[1] Nevertheless, it is certain that the

[1] When such a motive in the form of an actual perception is entirely wanting, there is wanting also the occasion for the manifestation of the premonitory instinct. Thus, *e.g.*, when birds of passage at the usual time leave their winter quarters for the far north, they may on their

prevision of the state of the weather is a case of unconscious clairvoyance; the stork departing for the south four weeks earlier than is customary, *knowing* as little as the stag, which, when a cold winter is at hand, allows a thicker skin than usual to grow. Animals have in their consciousness a feeling of the present state of the weather; on this their action follows precisely *as if* they had the idea of the future state of the weather. They do not, however, possess the latter idea in their consciousness. Accordingly, there only remains as natural connecting link the unconscious idea, which, however, is always a clairvoyant intuition, because it contains something which is neither directly given to the animal by sense-perception, nor can be inferred from the perception through its powers of understanding.

Most wonderful of all are the instincts relating to the propagation of the race. Every male discovers the female of its species with a view to sexual union, but certainly not guided merely by outward resemblance to itself; for in many kinds of animals,—*e.g.*, hermit-crabs,—the sexes are so radically different in form, that the male would in that case be led to copulate with the females of thousands of other species rather than with those of its own. In some butterflies there exists a polymorphism, according to which not only male and female are distinct, but even in the female sex itself there occur two quite distinct forms of the same species, of which one commonly belongs to the natural mimicry of a remote and well-protected species. And yet the males have intercourse only with the females of their own species, never with strangers which perhaps bear a closer resemblance to themselves. In the insect-order Strepsiptera the female is an ill-shaped worm, which dwells all its life long in the posterior segment of the body of a wasp, and only protrudes with its lenticular horny

arrival suffer distress by an unusually late spring, of which, of course, in a spot many hundreds of miles away, they could not have had even the slightest intimation through atmospheric influences.

head between two abdominal rings of the latter. The male, which lives only a few hours, resembling a moth in appearance, recognises its female by this stunted protuberance, and fecundates the eggs through a canal opening immediately below the animal's mouth.

Before any experience of the significance of child-bearing, the pregnant animal is impelled to seek seclusion, in order to prepare a couch for its young in a cave or other sheltered spot; the bird builds its nest as soon as the eggs mature in the ovary. Land-snails, crabs, tree-frogs, toads, enter the water, marine tortoises go upon land, many sea-fish ascend rivers, to lay their eggs where the fit conditions of their development are alone to be found. Insects lay their eggs in very various places—in the sand, on leaves, under the skin and nails of other animals, often in places where the future food of the larva is not yet in existence, *e.g.*, in the autumn on trees which do not sprout till the spring, or in the spring on blossoms which only bear fruit in autumn, or on caterpillars, which only in the pupa-state serve as food and protection to the parasitic larvæ. Other insects lay their eggs in places, whence they are conveyed to the proper place of their development by many circuitous courses, *e.g.*, certain gadflies on the lips of horses, others on those parts which horses are wont to lick, whereby the eggs pass into the entrails as their place of development, and when matured are voided with the ordure. The bovine gadflies select the most powerful and soundest animals with such accuracy, that cattle-dealers and farmers entirely rely upon them, and take by preference the animals whose skins show most traces of being the pasture of the gadfly's grubs. This selection of the best oxen by the gadflies can scarcely be the result of conscious trial and reflection, when experienced traders take them for their masters. The wall-wasp makes a hole in the sand several inches deep, deposits its egg in the same, and packs in a layer of footless green maggots approaching the pupa-state, there-

fore well nourished and able to live a long time without food, but so close together that they cannot stir nor enter the pupa condition themselves, and just as many, and no more, as the larva will require before its transformation into a chrysalis. A species of wasp, *Cerceris buprestícida*, which itself only lives on pollen, places by the side of each of its eggs, preserved in subterranean cells, three specimens of the genus Buprestis, which it becomes possessed of by lying in wait for them when they emerge from the chrysalis condition, and then slaying them in their weak condition, at the same time seeming to apply a juice which keeps them fresh and suitable for food. Several species of wasps open the cells of their larvæ as soon as these have consumed their food, in order to replenish them, and then close them again. In a similar way ants constantly choose the right moment when their larvæ are ripe for hatching in order to open for them the cocoon, from which they could not free themselves. What, now, does an insect, whose life in the case of but few species endures longer than for one deposition of eggs, know of the contents and the favourable place for the development of its eggs? what does it know of the kind of nutriment which the hatched larvæ will need, and which is quite different from its own? what does it know of the quantity of food which is needed? what *can* it know, *i.e.*, have in its consciousness, of all this? And yet its action, its efforts, and the high importance which it attributes to these things, prove that the animal has a knowledge of the future. It can then only be unconscious clairvoyance; and no less certainly must it be clairvoyance which arouses in animals just at the right moment the will to open the cells or the cocoon, when the larvæ have finished their stock of food, or are ripe for hatching.

The cuckoo, whose eggs, as is the case with other birds, do not need one or two, but seven to eleven days to mature in the ovary, which therefore cannot itself hatch its eggs, because the first would be rotten before the last

was laid, deposits them in the nests of other birds, of course only one egg in each nest. But in order that the birds may not perceive and reject the strange egg, it is not only much smaller than one would expect from the size of the cuckoo, because the latter only finds its opportunity with small birds, but also, as has been mentioned, it is strikingly like the other eggs of the nest in colour and marking. Now, as the cuckoo prefers to seek out a nest in which to deposit some days beforehand, it might be thought, with regard to the choice of nests, that the egg which is maturing assumes the colour of the eggs of the nest, because the pregnant cuckoo is thinking of the same; but this explanation does not meet the case of nests which are hidden in hollow trees (*e.g.*, *Sylvia phœnicurus*), or which have the shape of a baking-oven with a narrow entrance (*e.g.*, *Sylvia rufa*). In these cases the cuckoo can neither slip in nor look in; it must even deposit its egg from the outside and put it in with its beak; it can thus not at all perceive by its senses how the other eggs of the nest look. If now, notwithstanding, its own egg precisely resemble the others, this can only be due to unconscious clairvoyance, which regulates the colour and marking in the ovary. Should, however, the supposition be correct, that one and the same female cuckoo always deposits in the nests of one and the same species of bird, and accordingly always eggs of the same colour and marking, the problem would only assume the converse form, and the question would arise, How does the cuckoo learn what nest-eggs its own eggs look like, if she cannot peep into the particular nests?

An essential support and confirmation of the existence of clairvoyance in the instincts of animals lies in the facts, which also prove a clairvoyant intuition in the case of human beings under certain circumstances. The curative instincts of children and the pregnant have been already mentioned. For the most part, however, conformably to the higher stage of the human consciousness, there occurs here, along with the unconscious clairvoyance, a strong

reverberation in consciousness which exhibits itself as more or less clear presentiment. It is, moreover, in harmony with the greater independence of the human intellect that this presentiment does not exclusively occur with reference to the direct execution of an action, but sometimes also manifests itself as pure idea, without conscious will, quite apart from any deed about to be done, if only the condition is satisfied, that the object of this divination powerfully *stimulates* the *will* of the diviner. After suppression of an intermittent fever or other illness, it not seldom happens that the sick person precisely foretells the time at which an attack of convulsions will ensue and end. The same happens almost without exception in spontaneous, and often in artificially produced somnambulism: the Pythia, as is well known, always announced the time of her next ecstasy. Likewise in somnambulistic states the remedial instincts are often expressed in divination of the appropriate medicaments, which have as often led to brilliant results, as they seem to contradict the present standpoint of science. The prescription of remedies is certainly also the only use which respectable magnetisers make of the half-sleep of their somnambules. "It sometimes also occurs that quite healthy persons, before giving birth to a child, or in the very beginning of an illness, have a near presentiment of their approaching death, the fulfilment of which can hardly be explained as a mere coincidence, for otherwise it should far more rarely occur than the non-fulfilment, whereas the fact is just the contrary; moreover, many of these persons exhibit neither longing for death nor fear of it, and it cannot therefore be explained as the effect of imagination." (From the work of the celebrated physiologist Burdach, "Blicke in's Leben," chapter "Presentiment," whence a great part of our more striking instances is borrowed.) This presentiment of death, exceptional in the case of man, is quite common among animals, even those which neither know nor comprehend death. They creep away, when they feel

their end approaching, into places as remote, lonely, and concealed as possible; this is, *e.g.*, the reason why, even in towns, the corpse or skeleton of a cat is so seldom found. We must only assume that the unconscious clairvoyance, although essentially alike in man and animal, evokes presentiments of different distinctness; thus, *e.g.*, the cat is urged purely instinctively to creep away without knowing why; but in man there awakens the clear consciousness of the near end. But there are presentiments not merely of one's own death, but also of that of dearly-loved persons with whom we are closely linked, as is proved by the many stories where a dying man in his death-hour has appeared to his friend or spouse in a dream or vision, narratives which are found among all peoples and in all times, and in part undoubtedly contain genuine matter of fact. Closely allied is the faculty of second-sight, formerly common in Scotland and now in the Danish isles, whereby certain persons not in an ecstatic state, but in the full possession of their senses, foresee future or distant events which have an interest for them, as deaths, battles, great conflagrations (as Swedenborg the burning of Stockholm), arrival or fate of distant friends, &c. (*cf.* Ennemoser, "History of Magic," 2d ed., § 86). In many persons this clairvoyance is limited to the decease of acquaintances or neighbours; the instances of such corpse-seeresses are numerous, and are remarkably well, even judicially, attested. Transiently this faculty of second-sight is found in ecstatic states, in the spontaneous or artificially produced somnambulism of higher degrees of waking dreams, as well as in clear moments before death. Frequently the presentiments in which the clairvoyance of the Unconscious is revealed to consciousness are dark, incomprehensible, and symbolical, because they are obliged to take a sensible form in the brain, whilst the unconscious idea cannot partake of the form of sensibility (see C. Chap. i.); wherefore it is so easy to regard what, in mental moods, dreams, or the images of sick persons, is accidental as

significant. The great liability to error and to self-deception resulting herefrom, and the facility for intentionally deceiving other people, as well as the preponderating disadvantage which, as a general rule, the knowledge of the future brings to man, enhance beyond all doubt the practical mischief of all endeavours to obtain a knowledge of the future. This cannot, however, derogate from the theoretic importance of this department of phenomena, and cannot in any case hinder the recognition of the true facts of clairvoyance, even if buried beneath a confused mass of nonsense and deceit. It is true the prevailing rationalistic and materialistic tendency of our time finds it convenient to deny or to ignore all facts of this class, because they cannot be comprehended from a materialistic point of view, and cannot be brought to the test of experience according to the inductive method of difference; as if the latter were not just as inapplicable in ethics, social science, and politics! But for impartial judges the absolute denial of all such phenomena is consistent only with ignorance of the accounts, which, again, arises from the not wishing to become acquainted with them. I am convinced that many impugners of all human divination would judge differently, or at least more cautiously, if they thought it worth their while to make themselves acquainted with the reports of the more striking facts; and I am of opinion that at the present day nobody need be ashamed of adopting a view which all great minds of antiquity (Epicurus excepted) have acknowledged, whose possibility hardly any great modern philosopher has ventured to dispute, and which the champions of the German "enlightenment" were so little inclined to relegate to the province of old wives' fables, that Goethe has even related an example of second-sight in his own life, which was confirmed even to the smallest detail.

Ill-adapted as I should think this class of phenomena for forming the sole *foundation* of a scientific belief, I nevertheless think them highly worthy of mention as a

complementary extension of the series of phenomena presented to our view in the clairvoyance of animal and human instincts. And precisely because they form a continuation of this series (the reverberation in consciousness merely being stronger) do they lend support to the testimony of instinctive action to its own character, as their probability is itself strengthened by analogy with the clairvoyance of instinct. This, and the wish not to have missed an opportunity of lifting my voice against a fashionable prejudice, is the reason why I have allowed myself, in a scientific work, to make mention, if only incidentally, of matters so little credited at the present day.

We have to mention, in conclusion, one more species of instinct, which is likewise in the highest degree instructive with regard to its essential nature, and at the same time again shows how impossible it is to avoid the hypothesis of clairvoyance. In the previous examples every being acted for its own interest, except in the case of the instinct of propagation, when such action is always for the benefit of other individuals, namely, the offspring: we have still to consider the cases, where among several individuals there exists such a solidarity of instinct, that, on the one hand, the performance of every individual stands all in good stead, and, on the other hand, valuable work can only be done by the consentaneous co-operation of many. In higher animals this instinctive reciprocal action also takes place, but it is here more difficult to distinguish from union as result of conscious volition, as language makes possible a more perfect communication of mutual plans and intentions. Nevertheless we shall again distinctly see this effect of an instinct of the masses in the origin of language and the great political and social movements in the history of the world. Here we are dealing with examples as simple and clear as possible, and therefore turn our attention to lower animals, where the means of communication, in the absence of voice, mimetics, and physiognomy, are so imperfect, that the harmony and blending

of the performances of individuals in the main work cannot possibly be ascribed to conscious agreement through the medium of language.

According to Huber's observations (*Nouvelles Observations sur les abeilles*), on the building of new combs a part of the *larger* working bees, which had taken their fill of honey, took no part in the ordinary occupations of the rest, but kept perfectly quiet. After four-and-twenty hours, laminæ of wax had formed under their abdominal segments. This the bee drew out with its hinder foot, chewed, and formed into a band. The waxen laminæ thus prepared were then glued to the roof of the hive. When one bee had in this way used up its laminæ of wax another followed, which continued the same work. Thus was formed a small, rough, perpendicular wall, half a line in thickness, attached to the hive. Now came one of the *smaller* working bees, which had an empty abdomen, examined the wall, and made in the middle of one of its sides a shallow semi-oval excavation, piling up the extruded wax round its edge. After a short time it was relieved by another bee of a like kind, and in this way more than twenty bees succeeded one another. During this time, on the opposite side of the wall another bee had begun to make a similar excavation, but in correspondence with the edge of the excavation on the hither side. This bee, too, was relieved by fresh workers. Meanwhile other bees approached, drew waxen laminæ from under their abdominal segments, and therewith raised the edge of the little waxen wall. A succession of fresh workers continued to excavate the ground for new cells, whilst others persisted in the endeavour to bring those which had been already commenced into regular form, and likewise to prolong the prismatic walls of the same. All this time the bees on the opposite side of the waxen wall continued to work according to the same uniform plan, in most exact agreement with the working bees on the hither side, until at last the cells of both sides were finished in all their admirable

regularity, and with a complete interlinking, not only of those cells in juxtaposition, but also of those opposed to one another by their pyramidal bases. Now imagine beings limited to sensuous means of communication, desirous of agreeing upon a common purpose and plan, how they would misinterpret each other's intentions, would dispute and quarrel; how often something preposterous would be done, how work would have to be pulled to pieces and done over again; how for this business too many would press in, for that too few would be found; what a running to and fro there would be before each one had found his proper place; how now too many would offer to relieve their comrades, and now there would be a deficiency of hands, as we find in the combined efforts of human beings, standing so much higher in the scale of existence. We see nothing of all this among bees; on the contrary, it rather looks as if an invisible supreme architect had laid before the assembly the plan of the whole, and had impressed it upon each individual; as if every kind of labourer had learnt his destined work, place, and order of affording relief, and was informed by some signal of the moment when his turn came. But yet all this is mere result of instinct; and as by instinct the plan of the whole hive indwells in each single bee in unconscious clairvoyance, so a common instinct urges each individual to the work to which it is called, at the right moment; only by such means is the wonderful quiet and order possible. What conception one should form of this mutual instinct can only be cleared up much later on, but its possibility is now evident, since each individual must have an unconscious clear vision of the plan of the whole, and all the means available at the moment, of which, however, only that part which falls to his lot enters his own consciousness. Thus, *e.g.*, the larva of a bee spins its silken cocoon, but other bees must set the enclosing waxen roof thereon; the plan of the whole cocoon is thus present to all concerned unconsciously, but each one only performs its own part in the affair with conscious

volition. That the larva, after its metamorphosis, must be liberated from its cocoon by other bees has been already mentioned, likewise that the female bees kill the drones in autumn, so as not to have to maintain their useless messmates during the winter, and that they only allow them to live, if it be necessary to impregnate a new queen. While the eggs are maturing the workers are busy constructing cells for their reception, and usually for just the number of eggs the queen will lay, and, moreover, in the order in which the eggs will be laid, namely, first for the workers, then for the drones, then for the queens. Here again it is obvious that the instinctive actions of the workers are dependent upon concealed organic processes, which can manifestly only have an influence upon them through an unconscious clairvoyance. In the commonwealth of the bee, the productive and the sexual energy, elsewhere united, are personified in three kinds of individuals; and as in an individual the members, so here the individuals themselves stand in inner, unconscious, spiritually organic union.

We have then in this chapter obtained the following results:—Instinct is not the result of conscious reflection—not a consequence of bodily organisation—not mere result of a mechanism founded in the organisation of the brain—not the effect of a dead, and essentially foreign mechanism, externally adhering to the mind—but the individual's *own* activity, springing from his inmost nature and character. The end, to which a definite kind of instinctive action is subservient, is not conceived once for all by a mind standing *outside* the individual like a providence, and the necessity to act conformably thereto externally thrust upon the individual as something *foreign* to him; but the end of the instinct is in each single case unconsciously willed and imagined by the *individual*, and the choice of means suitable to each special case unconsciously made. Frequently the knowledge of the purpose of the unconscious cognition is not at all ascertainable by sense-perception.

Then the characteristic attribute of the Unconscious is shown in the clairvoyant intuition, of which there is an echo in Consciousness as presentiment, either feeble and evanescent, or, as in the case of man in particular, more or less distinct; whilst the instinctive action itself, the adoption of the means to the unconscious end, is always vividly realised in consciousness, because otherwise correct execution would be impossible. Lastly, clairvoyance is manifested also in the co-operation of several individuals for a common unconscious end.

Clairvoyance has hitherto been an incomprehensible empirical fact, and it might be objected: "I would rather put up with instinct as an incomprehensible fact." To this it is replied, firstly, that we find clairvoyance also apart from Instinct (especially in man); secondly, that clairvoyance is far from occurring in all instincts; that thus instinct and clairvoyance are empirically given as two distinct facts, in which perhaps clairvoyance may serve to explain instinct, but not conversely; and, lastly, in the third place, that the clairvoyance of the individual will not be found to be so incomprehensible a fact, but will, in the sequel of the investigation, receive a sufficient explanation, whereas the comprehension of instinct in every other way must be foregone.

The conception here worked out is the only one which enables us to comprehend instinct as the inmost core of every being; that it really is so is shown by the impulse of self-preservation and race-maintenance, which pervades the whole creation, by the heroic spirit of sacrifice, with which the well-being of the individual, nay, life itself, is offered as a sacrifice to instinct. Look at the caterpillar, which continues to mend its web till it succumbs through weakness; at the bird, which dies of exhaustion in laying its eggs; at the restlessness and grief of all migratory animals when prevented from migrating. An imprisoned cuckoo always dies in the winter from despair at not being able to depart; the vineyard snail,

also, if denied its winter sleep. The weakest animal, when a mother, accepts the struggle with the strongest opponent, and cheerfully suffers death for its young; an unsuccessful human lover becomes crazed, or commits suicide, as is evidenced by ever-fresh victims. A woman, on whom the Cæsarean section had once been successfully performed, was so little deterred from further sexual intercourse by the certain prospect of a repetition of this fearful and generally fatal operation, that she afterwards thrice underwent the same operation. And we are to believe that such a demonic power is exercised by something engrafted on the mind as a mechanism foreign to our being's core, or through a conscious reflection which rarely advances beyond a bald egoism, and which is altogether incapable of such sacrifices for the race as are exemplified in the procreative and maternal instincts!

In conclusion, we have still to consider the question how it happens that instincts are so uniform *within* an animal species, a circumstance which has not a little contributed to strengthen the view of the engrafted spiritual mechanism. It is, however, evident that like causes have like effects, whence such a phenomenon is explained of itself. For in any animal species the fundamental corporeal structure is the same, *also* the faculties and development of the conscious understanding (which is not the case with man, nor to a certain extent with the highest animals, to which their greater individuality is in part due). The external conditions of life are *likewise* tolerably the same, and so far as they are essentially different, the instincts also are different—a point which hardly requires any illustration (*cf.* pp. 79, 80). But from similar mental and bodily constitutions (under which like cerebral and ganglionic predispositions are comprehended) *and similar external circumstances* there necessarily follow, as a logical consequence, similar life-purposes; from like aims and like inner and outer circumstances follows, however, like choice of means, *i.e.*, like instincts. The last two steps

would not be granted without any limitation if one were dealing with conscious reflection, but since these logical consequences are drawn by the Unconscious, which unfailingly adopts the right course without hesitation or delay, they also always directly result from like premises. Thus even the last point which might be urged in support of opposite views is explained by our conception of instinct.

I conclude this chapter with the words of Schelling (I. vol. vii. p. 455): "There is no better touchstone of a genuine philosophy than the phenomena of animal instinct, which must be ranked among the very greatest by every thoughtful human being."

IV.

THE UNION OF WILL AND IDEA.

In every volition the *change into another state than the present* is willed. A present state is always given, even if it be pure rest; from this present state alone, however, willing could never arise unless there were the possibility, at least the ideal possibility, of something else. The one state, which should really and ideally allow of nothing else, would be complete in itself, without being able to pass out of itself, even idealiter, for this passing out of itself would be already its otherness. That volition also, which wills the persistence of the present state, is only possible through the idea of the *cessation* of such state, which is held in aversion, thus through a *double negation*; without the *idea* of cessation, *willing* of persistence would be impossible. The position is impregnable, then, that for volition two things especially are necessary, of which the one is the present state, and that, too, as starting-point. The other, the end or goal of volition, cannot be the now present state, for we always possess the present out and out. Thus it would be absurd still to will it; it can at the most produce satisfaction or dissatisfaction, but not willing. It cannot, then, be an existing, but merely a *non-existing* state which is willed, and willed, moreover, *in the form of existence*. The state can only pass from non-being into being through the *becoming*, and if it arrives at being through the becoming, the moment hitherto called present is *past*, and a new present has arrived, which looked at *from the former moment* is still *future*. This

former moment is, however, that of willing, consequently it is a *future* state, whose presentness is willed. This future state must then be contained in willing as the otherness of the now present state, and furnish volition with its end or goal, without which it is not thinkable. But now, as this future state without present existence *cannot be realiter* in the present act of willing, and yet *must* be therein in order to be *possible*, it must necessarily be contained in it *idealiter, i.e., as representation;* for the ideal is exactly the same as the real, only without reality, as conversely reality in things is that unique somewhat in them which cannot be brought about by thinking, and which exceeds their ideal content (*cf.* Schelling's Works, div. i. vol. iii. p. 364). In the same way, too, the (positively thought) present state can only become the starting-point of volition so far as it enters into the idea (in the widest sense of the word). We have, then, in willing, two ideas—that of a present state as starting-point, that of a future state as ultimate point or goal; the former is conceived as idea of a *present* reality, the latter as idea of a reality still *to be procured.* Now will is the endeavour to procure reality, or the endeavour to pass from the state represented by the former into that represented by the latter idea. This endeavour itself does not admit of description and definition, because we are confined to the sphere of *ideas,* and the endeavour is, *per se,* something heterogeneous to the idea; one can only say of it that it is the *immediate cause of change.* This endeavour is the ever-identical *empty form of volition,* which awaits replenishing with the most varied content of imagination; and as every *empty* form is an abstraction *without any other reality* than that which it obtains by its content, so likewise this. Volition is existential or actual only through the relation between the idea of the present and future state; if this relation be abstracted, the conception, which cannot be found without it, is deprived of reality, of existence. No one can in reality *merely* will, without willing *this* or *that:*

a will which does not will *something, is* not; only through the *definite content* does the will obtain the possibility of existence, and this content (not to be confused with motive) is, as we have seen, *Idea.* Therefore, NO VOLITION WITHOUT MENTAL OBJECT, as Aristotle said long ago (De An. iii. 10, 433, b. 27): *ὀρεκτικὸν δὲ οὐκ ἄνευ φαντασίας.*

One must, at the same time, guard against the false conclusion that, whenever one thing is proved to be contained in another thing without being contained in it realiter, the assertion is implicitly made that it must be contained in it idealiter. This would be, in fact, a logically incorrect conversion of the true proposition that the ideal is the same as the real, only without reality. That I am far from making this faulty conversion I have already given evidence, in seeking to explain memory and character by latent tendencies of the brain to particular molecular vibrations, and in that I look upon volition as actual manifestation of power, that is, of the will. The former, namely, are quiescent material states (definitely related positions of atoms), which may perhaps be looked upon as the *realisation* of an idea implicitly containing future states within it, but can never themselves be called ideal (*cf.* Ges. philos. Abhandlungen, No. II. pp. 35–37); the latter, on the contrary (the potentiality of volition), is only the formal condition of actuality in general without any definite content. Volition, abstracted from its content, is potentially possible, but thus it is also only the purely formal side of the definite act of will. The content itself of this act of will is never to be conceived otherwise than as representation or idea; for volition is not anything material, in whose stationary parts future differences might be predetermined by certain spatial relations, but it is something immaterial, and the not yet existent future to be realised by it must consequently be contained in it in an *immaterial* manner. But further, the content of will is always thoroughly definite, only in this way and not otherwise attaining realisation, thus not to be characterised

as potentiality, which would only express the formal condition of realisation in general, but not the definite "What" of such realisation. Without a fully determinate content of the yet non-existent reality, no realisation would be possible, because infinitely diverse possibilities remain open. This determinateness *of content* of a something not yet really existing, which at the same time is to be given *immaterially*, is now by no means to be thought otherwise than as *ideal* determinateness, *i.e.*, as representation. This condition is immediately known to us in conscious volition, and introspection can at any moment assure us that that which is willed is before its realisation nothing else than idea of an object.

But the naturalness and self-evidence of this relation between will and idea (as the two poles about which the whole life of the mind turns), and the impossibility of finding any substitute for the idea as content of will (*i.e.*, as immaterial, not yet realised determinateness of volition), constrain us to assume that *the whole* content of will is idea, no matter whether the will and idea be conscious or unconscious. In assuming will we assume idea as its determining and distinguishing content, and whoever refuses to recognise the ideal (unconscious) content of representation as the What and How determinative of action must, to be consistent, also refuse to speak of an unconscious will as the inner cause of the phenomenon. This simple consideration exposes the singular defectiveness of the system of Schopenhauer, in which the Idea is by no means recognised as the sole and exclusive content of Will, but a false and subordinate position is assigned it, whilst the maimed and blind Will nevertheless altogether comports itself *as if* it had a notional or ideal content.[1] But whoever, like Bahnsen, *e.g.*, denies that the

[1] When Dr. *J. Frauenstädt* assents to my explanations (Sunday supplement of the Voss. Ztg., 1870, No. 8, and "Unsere Zeit," Nov. 1869, p. 705), and thereby admits that the system of Schopenhauer is only tenable after a revision in the sense of the text, I can only express my satisfaction; but when he maintains that the system is not

will as potentiality of volition is something purely formal and absolutely empty—whoever sees in it, instead of an attribute of the all-one substance common to all beings, an individual essence subsisting and existing *a se* and *per se*—has only the alternative (if discontented with a postulated nondescript defying human comprehension), either to define the characteristic essence of this individual potency itself as *ideal* determination (thus merely needlessly transferring the completing idea from volition to the pure Will), or to go over entirely to Materialism, *i.e.*, to surrender the will as metaphysical principle, and to make it identical with the parts of the brain prearranged in this or that way, whose function then would be volition.

It may be advisable to touch here, at least by way of suggestion, on a few points which are adapted to confirm the proposition, that no kind of volitional activity is possible without ideal content of representation.

First of all, it would be a gross error to deny the ideal content of volition because volition is strictly *necessitated*. This argument would before all things prove *too much;* for, *in the first place,* it would just as much destroy the activity of volition as the ideality of the content, if it in fact reduced the necessitated event to a dead passivity, purely outwardly determined and deprived of every self-determination from within; and, *secondly,* would place conscious volition in precisely the same category as the unconscious volition of a falling stone, since on the one hand the former is just as strictly determined and necessitated as the latter; on the other hand, however, the falling stone, if it had consciousness, would (according to the well-known declaration of Spinoza) believe it acted freely. The objection simply ignores the truth that there is no purely passive necessitation at all, that rather all

defective in the manner specified, he is contradicted by the facts of the case; and historically those followers of Schopenhauer are more in the right, who think they remain faithful to the doctrine of their master by rejecting as impossible the unconscious ideation for which I contend.

necessitation includes *autonomous activity*,—autonomous because, in the way in which anything reacts against the forces influencing it, it follows the immanent laws of its own nature. This holds good of the force of gravitation of the stone which reacts on the terrestrial mass, or of the elasticity of the billiard-ball reacting against the inertia of the cushion, just as well as of the human character reacting against the conscious motives. If now we view the physical forces as will-forces, we cannot avoid regarding as an ideal determination the internal determination of the same by the immanent laws of the particular stage of the objectified will, which in every case is the necessary prius of real activity, *i.e.*, the content of volition before completed realisation, in this case also as Presentation (cf. C. Chap. v.)

A second point is, that the notion of necessitation or of the necessity of events is only to be maintained against the subjectivist deniers of an objective-real necessity, if the purely external event is regarded as determined and brought about by an inner *logical* compulsion, which, moreover, can be the only sense of a regularity of nature conformable with that of logic (*cf.* the conclusion of No. 3 of Chap. xv. C.) But if all necessity is logical, this (unconscious) logic can only penetrate the manifestation of the blind and intrinsically alogical Will, if its content is not again itself alogical Will, but logical Idea.

The third point, which I wished to mention, leads us into the province of the theory of cognition. Thought cannot throw off the nature of thought; it may perhaps deny itself as conscious thought, but it thereby attains so little positivity, that even the right to this negation of itself is lacking, so long as it is powerless to make any positive statement beyond the sphere of its own consciousness. Thought thus either never goes beyond itself, or the true positive content of what is beyond its sphere of consciousness must itself again be thought, representation, ideal content. Now since the causality which evokes the

act of sensation is the sole direct bond of union between consciousness and its otherness, the content of this causal affection which sensation follows must be an ideal one. Here we come, through want of an explanation to satisfy the demands of the theory of cognition, to the same truth as we reached before from metaphysical considerations, namely, that the causal necessitation or real causality must have an ideal content, although this is here demonstrated merely for the act of sense-impression (*cf.* Das Ding an Sich und seine Beschaffenheit: Berlin, C. Duncker, 1871, especially pp. 74–76).

We now then know that, wherever we meet with a volition, a representation must be united with it, at the very least that which ideally represents the goal, object, or content of the volition; the other idea, the starting-point, might possibly become equal to zero, if the will takes its rise in pure nothingness. However, we have nothing to do with this case in empirical phenomena; on the contrary, the starting-point is here given once for all as the positive feeling of a present condition. Accordingly every *unconscious volition* also which actually exists must be united with ideas, for in our former examination nothing cropped out in reference to the distinction of conscious and unconscious will. The positive feeling of the present state must even in conscious volition always be conscious to *the* nerve-centre to which the volition is referred, since a materially excited sensation, *if* it is present, must always be conscious; on the other hand, in unconscious volition the idea of the aim or object of volition must also, of course, be unconscious. Thus even in subordinate nerve-centres an idea must be united with every actual volition, and one, moreover, according to the nature of the will either relatively to the brain, or absolutely unconscious. For when the ganglionic will wills to contract the cardiac muscle in a particular manner, it must first of all possess the idea of this contraction, for otherwise God only knows what could be contracted, but not the

cardiac muscle. This idea is in any case unconscious in respect of the brain, but in respect of the ganglia probably conscious. But now, as we saw in the second chapter in the case of voluntary movements of the cerebral will, the contraction must be effected by the arising of a will to excite the appropriate central endings of the motor nerve-fibres in the ganglia. That again implies an idea of the position of these central nerve-endings, and this idea, analogous to the unconscious idea of the position of the motor nerve-endings in the brain, must be conceived as absolutely unconscious. In correspondence with these ideas the will to contract the cardiac muscle will also have to be thought as a *relatively* unconscious one, the will to excite the appropriate nerve-endings in the cardiac ganglia which effects its realisation as *absolutely* unconscious.

We have seen that volition is an empty form, which only finds in the idea a content giving it actuality, but that this form itself is something heterogeneous to the idea, and therefore not to be defined by concepts, *sui generis*, namely, that which, being, it is true, in itself still unreal, in its *operation* causes the *passage* from the ideal to the *actual* or real. Volition is thus the *form of the causality of the ideal with respect to the real;* it is nothing but operation or activity, pure going-out-of-self, whilst the idea is pure being-with-self and abiding-in-self.[1] But if the fundamental distinction of the form of the will from that of the idea consists in the outwardly efficient causality and the going out of self, the latter, as a something self-enclosed, must be without external causality, if the just stated difference is not again to be abolished. For ideation always accompanies volition, and if the idea also possessed an external causality, the distinction between will and idea would in fact be abolished, whilst we should have again to find and to characterise afresh the two different moments within each. Therefore we prefer to retain for these polar moments the words Will and Idea, and assume a con-

nection between the two when we find them united. We have already done this in the case of Will; it still remains in future to recognise Will in the Idea wherever the latter displays an outward causality. Aristotle has expressed this too (De. An. iii. 10, 433, a. 9): *καὶ ἡ φαντασία δὲ, ὅταν κινῇ, οὐ κινεῖ ἄνευ ὀρέξεως*, *i.e.*, "but the presentative faculty, when it acts externally, does not act without a will."

As we have seen above that the strict followers of Schopenhauer are willing, indeed, partially to recognise the unconscious will, but not the necessity of its being filled with unconscious representation or idea, so the Hegelians and Herbartians, if they rightly understand their masters, may perhaps readily recognise the unconscious idea or representation, but will not grant the necessity of the unconscious will. As the former, without being aware of it, implicitly think the idea in the matter of volition, so the latter think the Will in the impulse and faculty of self-realisation of the Idea, or in the conflicting energies of the psychological mental representations, without making explicitly clear to themselves this important implicit thought. Misled perhaps by Herbartian influences, some of our recent physiologists also make the idea, as such, without more ado, produce physiological effects in the body.

The first application we would make of the proposition here maintained is to confirm the statement, that the unconscious idea of the position of the central endings of motor nerve-fibres cannot operate without the will to excite those places, and that the mere unconscious idea of an instinctive purpose can be of no avail if the end is not also willed; for only by *willing* the end can the *willing* of the means be evoked, and only by the *willing* of the means these means themselves. What is here said of the instinctive purpose of course holds equally good of every other unconscious idea of an end which will present itself in the following chapters.

In conclusion, we can now more closely consider the question of the difference between the conscious and the unconscious will. A will, the content of which is formed by an unconscious idea, could at the most be consciously perceived according to its empty form of volition, and acts of will of that kind could then at the most only be discriminated by consciousness as different *in degree;* on the other hand, it can no longer be perceived by consciousness as *this specific* will, since its specific nature is only determined by its content. Accordingly, for such a will the application of the word "conscious" is unconditionally excluded, as in no case can more be said than that *this* specific will becomes *conscious.* Moreover, experience also teaches us that we know so much the less of a will the fewer the ideas or feelings accompanying it which reach the cerebral consciousness. Accordingly, it almost seems as if will as such were not generally accessible to consciousness, but became so only through its marriage with the idea. (This is proved, in fact, in Chap. iii. C.) However that may be, we can now assert that an *unconscious will is a will with unconscious idea as content,* for a will with conscious idea as content will always be conscious to us. If, in saying this, the distinction between conscious and unconscious will is only traced back to the equally difficult distinction between conscious and unconscious idea, yet an essential simplification of the problem is thereby obtained.

V.

THE UNCONSCIOUS IN REFLEX ACTIONS.

"At the present time those actions are called reflex in which the existing stimulus does not directly affect either a contractile tissue or a motor nerve, but a nerve which imparts its state of excitement to a central organ, whereupon, through the mediation of the latter, the stimulus overflows on to motor nerves, and then for the first time is made apparent by muscular movements."[1] This explanation seems to me as good a one as the physiologists are able to give, and no qualification of the same can be found which does not exclude certain classes of reflex action generally recognised by this name; and yet it is easy to see that it is much wider than physiology intends, since all movements and actions find a place among them, whose antecedent is not a thought which has arisen spontaneously in the brain, but is directly or indirectly a sense-impression. To pursue further this gradual passage of the lowest reflex movements into conscious voluntary actions, we must examine various examples.

If a freshly excised frog's heart, which pulsates slowly, be irritated by the prick of a needle, there arises independently of the rhythm of the beat a systole (contraction) in the normal succession of the parts. Before the complete extinction of irritability a time occurs when the

[1] Wagner's Handwörterbuch der Physiologie, vol. ii. p. 542, article "Nervous Physiology," by Volkmann. On the historical development of the notion of reflex movement, and for an estimate of the views of earlier investigators, which often come very near the truth, compare also the excellent memoir of J. W. Arnold: "The Doctrine of Reflex Functions."

irritation is only succeeded by a local contraction of decreasing extent. If the heart be divided when it is still powerful, but in such a way that there remain connecting portions between the parts, stimulation of the one part, in which a ganglion is contained in the muscular substance, produces contraction of both parts; on the other hand, irritation of the other part, which contains no ganglion, is only succeeded by local contraction. It follows from this, that the normal systole sequent on stimulation is no simple phenomenon of the stimulus of a contractile tissue, but a reflex movement mediated by the embedded ganglia. Other experiments, *e.g.*, the division of the spinal cord by small cross sections, &c., render it probable that any nerve-centre may effect reflex actions. The more this nerve-centre is developed the higher is the degree of propriety and adroitness in complicated movements exhibited in its reflex actions. Volkmann says (Hwb. ii. 545): "When different muscles are combined to produce a reflex movement, whether synchronous or successive, the combination is always mechanically appropriate. I mean, the simultaneously active muscles support one another, *e.g.*, in producing a flexure, and those which are active in succession unite in the judicious continuation and completion of the already commenced movement. If a decapitated frog in an extended position be stimulated in the hind leg sufficiently powerfully, the flexors and adductors of both legs first of all act in combination, next the legs are drawn towards the body, the extensors are combined for joint extension, and the total result is a more or less regular actual movement, whether of swimming or leaping.

"In many cases the reflectorial movements have not only the character of fitness, but even a certain dash of intention. Young dogs whose cerebrum and cerebellum I had destroyed, sparing the medulla oblongata, when I took them roughly by the ears tried to get rid of my hand with the fore-paw. One often sees decapitated frogs rub

a violently filliped part of the skin (only possible by an alternating play of the antagonists), and tortoises, which are injured after decapitation, withdraw into their carapace." The medulla oblongata, as the most developed nerve-centre after the brain, is also that which effects the most complicated reflex movements, as, *e.g.*, respiration with its modifications: sobbing, sighing, laughing, crying, coughing; also sneezing on irritation of the nasal membrane, swallowing, and vomiting on gentle pressure (by a morsel) or tickling of the throat and palate; laughing ensues on tickling the external skin, coughing on irritation of the larynx.

Very important for the whole life of man, and indicative of much more complicated events in the central organs, are the reflex movements called forth by sense-perceptions; certainly a class of phenomena to which physiology has not yet given sufficient attention, because they can only be studied with the whole living body, and partly only psychologically in one's own person. It is, however, manifest that this mode of investigation has great advantages over that on mutilated corpses or animals with their brains removed, since in organisms which have just suffered death, or undergone the severest operations, or have been treated with strychnine, one can by no means assume a normal capacity of reacting on the part of the lower central organs, which stand in such direct correspondence with the destroyed parts. Moreover, in decapitated animals the medulla oblongata and the large cerebral ganglia, which probably should be reckoned to the spinal cord, or at least not to the brain, have also been removed. All this sufficiently explains the purposeless character of the reflex movements in some of these experiments, where one is unable to eliminate the pathological elements.

The proximate reflex movements called forth by a sense-impression consist in this, that the particular sense-organ is brought into the position, tension, &c., requisite for clear

perception. In touch there arises a movement to and fro of the finger; in taste, secretion of saliva and movement to and fro of the sapid matter in the mouth; in smelling, dilatation of the nostrils and short, quick inspirations; in hearing, tension of the tympanic membrane and movements of the ears and head; in vision, convergence of both optic axes towards the point of greatest stimulation, accommodation of the lens for distance, and of the iris to the intensity of light. All these movements, with the exception of the last named, can also be executed voluntarily, but only by means of the idea of the altered sense-impression; only with difficulty or not at all by the direct idea of the movements. *E.g.*, when the investigating oculist holds up his finger as a mark for the patient and bids him look up towards the right, there frequently occur the most distorted movements of the eyes and eyelids, but not the one desired. With enhanced vividness of the impression, the head, arms, and whole body not seldom take involuntary part in these reflex actions. Further, through the medium of the ear reflex movements are set up in the organs of speech, for, as is well known, children and animals learn to talk in consequence of the involuntary impulse which compels them to reproduce what has been heard. The like occurs in the catching of melodies, where the phenomenon is more easily observed, and in adults also. Without this reflexion it would be impossible to train birds to whistle tunes. The reflex compulsion to utter words one is accustomed to hear spoken may even be observed in our own thinking. Here, according to a process exemplified in a still higher degree in the production of dream-images and hallucinations, the thought of the word which is not yet an object of sense causes a centrifugal current of innervation towards the auditory nerve, as the reflex consequence of which a centripetal current brings back the auditory sensation of the word, and this calls forth in the organs of speech the reflex movements of the loud

or subdued utterance. The undisciplined man, *e.g.*, the uneducated or passionately excited man, thinks aloud. It requires the constraint of education to think silently, and even then one will almost always, if on the watch for it, detect a muscular feeling in the organ of speech, which is a weaker form of that which would arise in the utterance of the words, and thus manifestly represents a tendency to action. In reading it is just the same.

One of the most important reflex actions of the cerebrum, especially in respect to sense-perception, is that centrifugal current of innervation which we call Attention, and which is essential for all tolerably clear perception. It arises as reflex action on a stimulus, which affects the sensory nerve of the organs of sense. If the brain is otherwise too much occupied to react on such stimuli, this action does not take place, and then the sense-impression escapes us without becoming perception. This current of innervation can be directed to the several parts of a sense-perception (*e.g.*, to any part of the field of vision or an instrument in the orchestra), which explains the fact that one often sees and hears just that for which the present state of the brain has a particular susceptibility, which is also in accordance with many of the phenomena of somnambulism. It is also the partial failure of this current of innervation, which renders comprehensible the otherwise inexplicable difference between the *absent* and *black* parts of the field of vision. We may also voluntarily direct this stream of innervation to certain parts of the body, and thereby bring into consciousness as perceptions the usually unobserved sensations which all parts of the body are continually producing; *e.g.*, I can feel my fingertips if I carefully attend to them; (think also of the hypochondriacal). A boundary-line between such currents of innervation as are produced by conscious will, and those which follow as reflex action on impressions of sense when the interest of the brain is fully gained, can no more be discovered and drawn here than in any

other department of these phenomena. Very remarkable are many of the reflex movements which are effected by the eye and the sense of touch. The eye not only protects itself reflectorially from injuries, which it sees approaching, by closure, bending of the head and body, or the holding up of the arm, but it also protects other threatened bodily parts in the same way, nay, even other things. For example, if a glass falls from the table, the sudden catching at it is just as much reflex movement as the ducking of the head when a stone is coming towards us, or the parrying of the thrusts in fencing; for in the one as in the other case the resolution after conscious reflection would come much too late. Must one really pronounce that a different principle which, in the one case, causes the young dog deprived of its brain to thrust aside with its paw a hand nipping its ear, and in the other causes the human being to ward off by the sudden raising of the arm a threatening blow perceived by the eye? The most wonderful reflectorial performances of the combined senses of sight and touch consist, however, in the complicated movements involved in preserving one's balance, as in sliding, walking, riding, dancing, leaping, performing gymnastic exercises, skating, &c., in part spontaneous (especially in the case of animals), in part acquired by practice, an original capacity being always presupposed. If one leaps a ditch, it is not easy to leap beyond the farther brink, although one may be able to leap much farther on level ground; but the eye, through an unconscious reflection, brings it about that just sufficient muscular force is applied to reach the opposite side, and this unconscious will is often stronger than the conscious one to leap farther. It is remarkable that all the afore-mentioned functions are executed much more easily, more certainly, and even more gracefully, if they are performed without conscious volition as simple reflex movements of the sensations of sight and touch. Every intervention of the cerebral consciousness operates only inhibitively and disturbingly; hence mules walk more

surely than men in dangerous paths, because they are not disturbed by conscious reflection, and somnambulists go and climb in the unconscious state where, if conscious, they would infallibly meet with an accident. For conscious reflection always brings along with it doubt and hesitation, and this frequently a fatal tardiness; the unconscious intelligence, on the other hand, is always beyond a doubt more certain to seize the right course, or rather doubt never occurs to it, and therefore it almost always does the right thing at the right moment. Even prelection and playing from notes, if consciousness be otherwise occupied or asleep, can take the form of mere reflex movements following on impressions of feeling, as cases have been observed where reading aloud has been continued a certain time after falling asleep, or pieces of music have been better played in dreamy unconscious states than when wide awake. That reading or playing from notes can often be continued quite unconsciously and without the slightest after-memory of the subject-matter, when consciousness is occupied with other fascinating thoughts, any one can observe for himself. Nay, even sudden curt answers to quick questions have often something reflectorially unconscious about them, when they drop out unawares like a pistol-shot, and afterwards one is often astonished or ashamed if they have been unsuitable to the occasion and the company.

More important, however, than all that has been hitherto noticed is the consideration that there is no, or almost no, voluntary movement which must not at the same time be regarded as a combination of reflex actions. I mean this: Anatomical investigations show that, in the upper part of the spinal cord the number of the primitive fibres amounts to only a very small fraction of the primitive fibres of all the nerves, which are destined to call forth movement through the conscious will, that is, by the brain. But now, as the path from the brain to the nerves supplying the muscles is, with few exceptions, only through the upper

part of the spinal cord, it follows that a fibre in the upper part of the spinal cord must be destined to innervate a great number of muscular nerve-fibres of the same part. A direct anastomosis (interlacing, connecting) of the fibres might be imagined, but this assumption seems highly improbable according to anatomical observations, and we are also compelled to abandon it from the circumstance that one and the same movement is now stimulated by the brain, now, in consequence of some other stimulation, is independently executed by the central organs of the spinal cord, and admits an immense variety of the most delicate and intricate modifications, whilst a direct anastomosis must necessitate the same invariable movements. In addition to this, the brain, which gives the order to execute a complicated series of movements, has itself no idea of this complication, but only a collective idea of the result (as in speaking, singing, walking, dancing, running, leaping, performing gymnastic exercises, fighting, riding, skating), so that the whole detail of execution, which is requisite for the total result intended, is intrusted to the spinal cord. (Let any one ask himself whether he knows anything of the muscular contractions necessary for uttering a word or for singing a colorature.) Accordingly the only mode of conceiving the matter remaining seems to me to be this: that the current of innervation, which carries the conscious volition of the total movement from the brain to the central organ of such movement in the spinal cord, and which is for the brain, indeed, centrifugal, but for the nerve-centre of the movement centripetal, that this current is felt as sensation by the motor centre just as well as an impression coming from the peripheral parts of the body, and that the consequence of this sensation is the occurrence of the intended movement. But it is clear that we here again see the definition of reflex movement to hold good, as soon as we resolve to employ the relative conceptions of centrifugal and centripetal currents in their *right* relations.

One easily sees that there is hardly a movement which, even if it is originated by the cerebral consciousness, is not first conducted once or several times to another motor centre, and there visibly executed. Consciousness *can*, it is true, decompose movements to a certain extent, and give a conscious impulse to any partial movement (this is indeed the way we learn to make the movement), but, in the first place, every such partial presentation will probably find no other path to the muscles than through the grey matter of the motor centres, thus always retaining the character of a reflex; secondly, even the simplest motor elements accessible to the cerebral consciousness still require highly complicated combinations of movement for their execution, into which consciousness never penetrates (*e.g.*, the utterance of a vowel or the singing of a note); and, thirdly, if its simple elements are as far as possible intended by the conscious will, the whole movement has something extremely slow, coarse, awkward, and heavy about it, whilst the very same movement is executed with the greatest facility, speed, certainty, and elegance, if only the final result was intended by the cerebral consciousness, and the execution was intrusted to the motor centres in question. One has only to think of the phenomenon of stammering. The stammerer often speaks quite fluently if he does not at all think of the utterance, and his consciousness is occupied only with the matter of his speech, but not with the mode of realisation; but as soon as he thinks of the utterance and desires to form this or that sound by conscious volition, he does not succeed, and in its stead all sorts of concomitant movements occur, which may even become convulsive. It is just the same with scrivener's cramp and all the above-mentioned bodily exercises, in which the main thing is that they become second nature, *i.e.*, that the conscious will ceases to trouble itself about the details. Through this way of conceiving the matter the phenomenon becomes for the first time explicable, why often a single impulse of the conscious will suffices to introduce a long

series of periodically recurring movements, which lasts until it is interrupted by a new volitional impulse. Without this arrangement all our ordinary actions, as walking, reading, playing, speaking, &c., would absorb an amount of the volitional impulses of the brain which must very soon result in fatigue. It, however, proves also the independence of the lower nerve-centres, and most decidedly refutes the above assumption of a direct anastomosis of the nerves. It may also now be comprehensible how it comes to pass that so many actions and occupations, whose slightest details must be attended to in their conscious acquisition, later on, with prolonged practice and habit, are performed quite unconsciously, as knitting, playing on the piano, reading, writing, &c. All the work, then, which during acquisition was done by the brain, has been handed over to subordinate nerve-centres; for these can call into play an habitual combination of certain activities just as efficiently as the brain in thinking or in learning by heart. That, however, then the activities become for the most part unconscious to the brain, gives them in respect to the brain a certain resemblance to instinctive actions, whilst indeed, in respect to the nerve-centre which presides over the activity, practice and custom is the precise opposite of instinct.

That all the phenomena hitherto considered have essentially the same underlying principle, it is not very difficult to see. We started with the reflectorial movements produced by irritation of peripheral parts of the body, and found a purpose most decidedly expressed therein, both in the result of the whole movement and in the simultaneous and successive combinations of the most different muscles; nay, in part, most decidedly expressed even in an alternating play of the antagonists. We then passed on to the reflex movements produced by means of sense-perceptions, and found here the same fact, only often with a dash of higher intelligence, in that the higher central points of the spinal cord came more into play.

Lastly, we noticed that reflex actions, in which the exciting stimulus is an innervating current from the brain to the other central organs concerned, are produced by the conscious will, and did not remark here any quantitative increase of effects as compared with the reflex movements produced through sense-perceptions; naturally enough, for the intelligence revealed in reflection depends far more on the stage of development of the reflecting central organ than on the nature of the stimulus.

That, in fact, the brain also can become a central organ of reflex actions, we cannot doubt from the analogy of its structure with the other centres. In reflex actions of the ganglionic system and in individuals deprived of brains, perception by the brain is excluded; but this may very well accompany the reflex actions of the spinal cord in the case of sound organisms. In this case, however, only the stimulation, but not the will to move, is felt in the brain; but the latter must manifestly also have place if the brain itself is to be a central organ of reflection. Such cases are, however, already familiar to us; *e.g.*, the catching at a falling glass or the parrying of a previously seen blow may have these characteristics. Accordingly we shall not be able to avoid regarding them as reflex actions, if only the link between perception of the action and the will to execute it lies outside the cerebral consciousness, which receives additional confirmation from the fact that conscious reflection would manifestly come too late. To the same category belongs a part of the not quite unconscious prelection and preluding, or the rapid answers to sudden questions, or the sudden taking off the hat at the unexpected greeting of an unknown person. Cerebral reflection frequently surpasses the reflection of the spinal cord, and prevents its occurrence; *e.g.*, a decapitated frog scratches the nipped place on the skin, a living one hops away. Here is seen the direct transition from cerebral reflection to conscious psychical activity, between which no line can be drawn. There follows from this the unity of

the principle underlying all these phenomena. There are, therefore, only two logical ways of looking at these things: either the mind is everywhere only the last result of material processes, both in the brain and in the rest of the nervous life (then, however, purpose would also have to be everywhere denied when not posited by conscious nervous activity), or the soul is everywhere the principle lying at the basis of material nervous processes, causing and regulating them, and consciousness is only a phenomenal form of the same, brought about by means of these processes. We shall see in the sequel which of these two assumptions better suits the facts.

The next point we have to investigate is the question, whether the phenomena we are considering may be looked upon as effects of a dead mechanism, or whether we are not compelled to conceive them as consequences of an intelligence immanent in the central organs, in which case the foregoing alternative may provisionally remain undiscussed. Let us first turn to physiology. The skin of a frog's thigh being pricked by a needle, we see both legs drawn up, provided the little piece of spinal cord from which issue the crural nerves remains intact. The prick of the needle manifestly affects only one primitive nerve-fibre, since within a circle of a certain size the position of the pricked place cannot be distinguished; the number of motor fibres put in action by the same is, however, enormously large, for it can embrace the whole body. The direct anastomosis of the sensory and motor nerves is hereby rendered improbable in the highest degree. It becomes, however, still more so by the circumstance that *the same* motor fibres react, when this or that place in the skin of the frog's thigh is pricked, when accordingly *different* sensory nerve-fibres convey the stimulus to the centre. Besides, microscopic investigations not only give no support to this supposition, but what is more, Kölliker has directly observed the emergence of motor fibres from globules of grey nerve-matter (central organ), and it is now generally supposed that the

central origin of all the nerve-fibres must be sought in the ganglion-cells, *i.e.*, the peculiar spherical or radiated cells of the grey nerve-matter. The stimulus conducted by the sensory fibres must accordingly, in any case, be first received by the central organ, and through this be conducted to the motor nerves; in no other way could any sensory fibre possibly be in a position to act upon any motor fibre of the same centre (as is actually the case). But if all the stimuli are first received by the central organ, and are only propagated from this to the motor nerves, then the materialistic explanation of reflex actions by a peculiar mechanism of the channels of conduction becomes quite impossible; for no laws and contrivances can at all be imagined which should allow one and the same current to pass over now to near, now to remote parts, should cause the reactions to follow now in this, now in that order, nay, should even permit an *alternating play of the antagonists* to occur on a *simple stimulus* (as in the rubbing of the filliped part). The impossibility of a pre-established mechanism is, however, physiologically demonstrable in a much more striking way. If one divides the spinal cord throughout its whole length by a longitudinal section, the capacity for reflex movements is not affected; it is only limited to the half of the body irritated on each occasion. If, on the other hand, a connecting bridge be left between the two separated halves at any place whatsoever, or if, at some distance from each other, now the left and then the right half of the spinal cord be cut across, so that all the longitudinal fibres are severed, *general* reflex movements may be excited by stimulation of each main point. This is probably the clearest proof that the motor reaction is not a consequence of the *predetermined* paths of the conduction of the stimulus, but that the current after destruction of the usual channels *makes for itself new paths*, in order to bring about the *suitable* reflex movements, provided only that the parts be not completely isolated. There must then be a principle *superior* to the material laws of con-

duction of the nerve-currents, which brings about this change of circumstances, in virtue of which the courses of these currents are changed, and this principle can only be an immaterial one. This is also verified by the circumstance, that the union of reflex movements is for the most part capable of being dissolved by conscious volition and exercise.

Forcible as are these anatomical-physiological reasons, they are still not the strongest of all. If the conformity to the end in view which appears in reflex actions were one externally predetermined, brought on the scene by a material mechanism, then the capability of accommodating movements to the nature of the circumstances, this inexhaustible wealth of combinations, each of which is suitable to its special case, would be plainly inexplicable. We should rather expect a constant recurrence of a few similar complex movements, whereas a single glance at the infinite number of combinations, as exemplified in the simple case of preserving one's balance, is sufficient to establish the conviction of an immanent fitness—an *individual providence*, as we have already come to know it when considering Instinct. We are absolutely obliged, then, so to represent to ourselves the event that the stimulus is perceived as idea, and through the idea of the danger or feeling of pain connected therewith the idea of relief through the corresponding counter-movement is produced, which now becomes the object of volition. That the nerve-centres of the spinal cord and ganglia possess the capacity of willing we have already settled; that the cases being strictly parallel, they must also possess sensibility is evident at once; but since no sensation can be imagined without a certain degree of consciousness, however small, they also possess a certain consciousness. The beginning and the end of the process, the perception of the stimulus and the will to move, are then the functions which we have no hesitation in ascribing to every nervous centre. The only question is, whether the link between them, the

positing of design, can also be a function of conscious intellectual association of these nerve-centres? Now this must certainly be denied, for we have indeed seen, that the effects of reflexion are of so great importance to the organism, just because they so far surpass the performances of the conscious reflection of the *brain* in ease, speed, and accuracy. This is, however, precisely the character of the unconscious idea, as we have become acquainted with it in the case of instinct, and have learnt further to know it in other ways. Accordingly all that we have adduced in the case of instinct against its origination through conscious reflection holds here in a still higher degree, partly because the instantaneousness of the effect is more striking in the present case, and is in still greater contrast with the sluggishness of conscious thought in beings low down in the scale, partly because we have here to do in the case of animals especially with lower centres, whilst we only find results of conscious reflection at all worth mentioning where the cerebral functions of the higher birds and mammals come into play. If, on the other hand, we contemplate the animals whose chief centres are about on a par with the lower human nerve-centres, we observe the greatest obtuseness and stupidity (*e.g.*, in most amphibia and fishes), in contrast to which one cannot help being struck by the wonderful accuracy and fitness with which instinctive actions are performed, ever increasing in significance and extent in proportion to the entire mental life of the animal. Here there is none of that hesitancy of discursive thought, none of that shrewd and cautious consideration, which we observe in higher animals; but the instinctive action instantly follows on the impression, whereas reflection would often cost even the human brain a considerable time, and, when the action is inappropriate, as may well happen in sense-illusions in the conscious perception of causes, the pernicious error is embraced with equal certainty. We are compelled to designate this attribute of the unconscious idea, in contrast

to discursive thinking, an immediate intellectual intuition, and wherever we meet with the (not relatively to this or that centre, but absolutely) unconscious idea, we shall find this to be its characteristic.

This comparison with instinct will decidedly protect us, then, from regarding the immanent fitness of reflex movements as produced by conscious thought. The psychical autopsy of those reflex movements whose central organ is the brain entirely agrees with this; the first and last term of the psychical process, the perception of the stimulus, and the will to move fall within the consciousness of the organ, but not the uniting middle terms, which must contain the idea of design. The only mode of apprehending the matter, which is possible after our examination, is then this: that the reflex movements are the instinctive actions of the subordinate nerve-centres, *i.e.*, absolutely unconscious presentations, which embody the will of the reflex action (conscious for the particular centre, but unconscious for the brain), in consequence of the perception of the stimulus. In addition to this perception in the reflecting centre, the stimulus can, by conduction, also be felt in the brain; but there is then a second perception, which has nothing to do with the reflex movement and its occurrence. Instincts and reflex actions are also alike in this, that they exhibit essentially similar reactions in the individuals of the same animal species with similar stimuli and motives. This circumstance has given strength to the opinion that a dead mechanism is present instead of unconscious mental activity and immanent adaptation; but this circumstance as an objection to our view is invalidated by the consideration, that it is capable of an easy explanation in the manner indicated at the close of the chapter on Instinct.

VI.

THE UNCONSCIOUS IN THE REPARATIVE POWER OF NATURE.

WHEN the nest of the bird, the web of the spider, the cocoon of the caterpillar, the shell of the snail are injured,—when the bird is stripped of a portion of its feathery robe,—the sufferers repair the loss which may imperil or impede their future existence. We have already seen that some of these phenomena must be ascribed to instinct, and can we fail to perceive the striking analogy of the other cases? We have seen that there is an unconscious idea of purpose, which, united with Will, dictates the conscious willing of the means to attain it; and are we to doubt that we have to do with the same thing, when the sphere of influence is no longer external, but the body itself, since we are not able to draw the line where the body proper begins and ends, as in the cocoon of the caterpillar, the shell of the snail, the feather-garment of the bird, or between excretion and secretion? If we deprive the polype of its tentacles or the worm of its head, the creature must die for want of food; and if the animal replaces the tentacles or the head and continues to live, can anything but the unconscious idea of their indispensableness be the fundamental cause of the restoration? Let it not be replied that the difference between instinct and the *vis medicatrix* lies in this, that in the former case the perceiving and willing of the means are, at any rate, conscious, but in the latter case these also are unconscious. For after the discussion on the independence of the lower nerve-centres, it cannot be doubted that the willing of the means may very well somehow and

somewhere reach the stage of consciousness in the lower nerve-centres, *e.g.*, the small ganglionic cells, from which the sympathetic nerve-fibres which regulate nutrition arise, even if the chief centre of the animal knows nothing at all about it. On the other hand, no one will confidently decide, whether and how far in the lower animals in the case of instinct even the willing of the means is a conscious act.

Let us now look a little closer at the effects of the *vis medicatrix*. In the case of the Hydræ every part of the mass is replaced, so that a new animal is formed out of each piece, whether the division be transverse or longitudinal, or the creature be even cut into shreds. Among the Planariæ every segment, if it only amounts to one-tenth or one-eighth of the whole body, becomes a fresh animal. Among the Annelids or worms restoration follows only after transverse section, when head or tail is always regenerated. In some cases the animal may be cut into pieces, and yet each single piece develops into a perfect example of its kind. It seems here clear enough that if, after any one of these indefinitely numerous sections, the separated part always furnishes a specimen manifesting the typical idea of its kind, this effect cannot be due to a dead causality, but the type-form must be present in each piece of the animal. But an IDEA can only exist either realiter in its external manifestation as realised idea, or idealiter so far as it takes the form of mental picture, and in and through the *presentative* act. Hence every fragment of the animal must have the unconscious image of the type according to which it accomplishes this regeneration; just as the bee before the construction of its first cell, and without ever having seen the like, carries in itself the unconscious representation of the hexagonal cell, accurate to half an angular minute, or as every bird must unconsciously have an idea of the form of the nest and mode of song characteristic of its species, before it has had any experience of the same. And observing the process of regeneration, *e.g.*, of

a divided earthworm, a white bud may be seen sprouting at the cut part, which gradually becomes larger, then acquires narrow, closely packed rings, expanding on all sides, and contains prolongations of the digestive canal, the vascular system, and the ganglionic cord. It requires a strong faith to suppose that the nature of the exudation at the wounded part and the vicinity of the corresponding organs are sufficient to bring about a further growth of the animal. But when one sees how from two *similar* cut surfaces, separated by several rings, there is formed on the one side the *head* with its special organs, on the other the *tail* with its organs, *and with organs too which have nothing at all analogous in the remaining portion of the trunk*, the assumption of a dead causality, of a material mechanism without an ideal factor, becomes a sheer impossibility.

In addition to this there are various secondary circumstances, which most clearly prove that the idea of what must be executed in the special case to realise the type is the originally determining element in these events. If the animal is not full-grown, and a part of it be violently removed, the regenerated part does not correspond to the former state of the animal, but is constituted as such part would have been *had the normal process of development never been interrupted.* This may be seen if the leg of a young salamander or the tail of a tadpole be cut off. Somewhat similar is the case of the horns of the stag, which are annually renewed as long as the youthful vigour of the animal remains; but when the development of the organism has reached its highest point and the vigour declines, the last pair of horns either remains till death, or the pair annually reproduced becomes in extreme age shorter and simpler.

Further, the force directed to this restoration of a part is greater the *more important* such part is for the continued existence of the animal: thus, *e.g.*, according to Spallanzani, worms regenerate their heads before their tails, and in

fishes the restoration of the amputated fins takes place in the order of their importance as motor organs; thus the caudal fins first, then the pectoral and ventral, and lastly the dorsal fins. Should the force, or more accurately the power, of the unconscious will in moulding its material and the external circumstances be insufficient for the regeneration of a part in the normal way, still the type of the class always gleams through the malformations which then arise. Thus, *e.g.*, if only one tentacle instead of two grows again on a snail's head which has been cut off, this one has two eyes, and men who have lost one joint of a finger sometimes have a nail growing on the second. The more a part is exposed to injury, the more easily is it regenerated. Thus, *e.g.*, the rays of the Asterias, the legs of spiders, the tentacles and antennæ of snails and beetles, the tails of lizards, possess a considerable regenerative power on account of their liability to injury. For the most part, it is some special joint from which the regeneration most easily proceeds, in which case the connected limb is extremely fragile; and if injury occurs anywhere else, an additional limb is frequently *thrown off* at that spot. Crabs, for example, do this. Spiders likewise free themselves at the cost of a leg when they find it grasped or compressed; but if the animal be held fast whilst the leg is squeezed, it cannot afterwards thus unceremoniously throw off the same, but it first entangles the leg in its web, then propels itself with the other legs, and in this way wrenches it off. This is manifestly instinct; and when the crab spontaneously throws off the injured leg, is that to be called something fundamentally different from instinct? And yet rejection of the injured limb is merely the first act of restoration. Still more wonderful is the instinct of the Holothuriæ which live in the Philippine Islands of the South Sea. These devour coral sand, and if they be taken from their native haunts and transferred to clear sea-water, they of their own accord eject from the anus the intestinal canal, with the branchiæ and

all other organs connected therewith, in order to form new viscera more in harmony with the altered medium. (A Holothuria burdened with needles or knives literally jumps out of its skin, rejecting it without in any way injuring its interior.)

The higher we ascend in the animal scale, the less potent, as a rule, becomes the *vis medicatrix*, being least influential in man. As long, therefore, as human physiology was exclusively studied, it was possible for the error to arise that a merely material mechanism produces remedial effects; but as anatomy first began to yield important results when it was studied comparatively, and psychology is just beginning to afford true enlightenment through a similar procedure, so in physiology only comparative investigation can give genuine insight. But when we have once got on the right track through a clear understanding of relations in the case of the lower animals, it will not be difficult to recognise this view also as the only possible one in the higher stages of organisation.

The reasons for the limitation of the *vis medicatrix* in the higher animal classes are partly internal, partly external. The inmost and deepest ground is that the organising force turns always more and more away from the outworks, and bends its whole energy to reach the final goal of all organisation, the organ of consciousness, in order to raise this to even higher perfection. The external grounds are that the organs of the higher animal classes are more solid, and also, in consequence of the mode of life of these creatures, are much less liable to fracture and mutilation, but at the most are exposed to wounds and injuries, for the majority of which the healing power of Nature is sufficient; and further, that the greater solidity of structure makes replacement on a large scale physically and chemically difficult. For, on the one hand, we see even in lower animals that aquatic animals, on account of containing a greater quantity of moisture, possess a greater recuperative power than land animals of

the same species, *e.g.*, water and earth worms. On the other hand, the chief mass of the animals capable of extensive restoration consists of the same tissues which in man also exhibit the highest recuperative power, *e.g.*, the tissues which mostly give solidity to invertebrate animals (skin, hairs, scales), cellular tissue, vascular system, or even the elementary organic substance of the lowest classes. That, however, these external grounds are not sufficient we see from the Vertebrata, for instance, in their second lowest class, the Amphibia, many of which exhibit a quite wonderful recuperative energy. Spallanzani saw among Salamanders the four legs with their ninety-eight bones, besides the tail with its vertebræ, reproduced six times within three months; in others, the lower jaw, with all its muscles, vessels, and teeth, was regenerated. Blumenbach saw even the eye restored within the space of a year, if the optic nerve remained uninjured, and a part of the coats of the eye remained behind in the orbit. In the case of frogs and tortoises the legs also are sometimes regenerated, but only as long as they are young, and even then but slowly. As the psychical power of the individual is at first active in an exclusively external manner, and then with the advance of age more and more withdraws inwards, and throws itself on the improvement of the conscious life of the mind; so also in all beings the *vis medicatrix* is the more potent the younger they are, accordingly greatest of all in the case of embryos and all larvæ, which must be regarded as embryos. We cannot, therefore, wonder that the same law obtains in the animal series as a whole, where in the wider sense the lower are related to the higher as embryos or imperfect stages of development.

A very remarkable case is the regeneration of the cerebral hemispheres, observed by Voit in a pigeon which had been deprived of its brain. After five months, the intelligence of the animal having manifestly increased during the latter part of that time, a white mass showed itself in the place of the removed cerebral hemispheres,

which possessed altogether the appearance and consistency of the white substance of the brain, and which also passed uninterruptedly and imperceptibly into the peduncles of the cerebrum, which had not been removed. Primitive nerve-fibres with double borders were clearly to be seen, also ganglionic cells.

If we now pass to the Mammalia, and to man in particular, we certainly do not find such striking phenomena as in the lower animals, but always enough to convince us that the dead causality of material processes is insufficient, and that it is a psychical power which, aided by the unconscious representation of the type, and the means requisite for the end of self-preservation, brings about those circumstances in consequence of which the restoration of the normal condition must ensue, according to general physical and chemical laws. In every disturbance this process occurs, unless the power of the unconscious will in mastering its circumstances is too small, so that the disturbance induces a permanent abnormity or death. No medicine can do more than aid that process and facilitate the mastering of the disturbing circumstances, but the positive initiative (the will) must always proceed from the organism itself.

Let us first consider the consolidation of severed tissues and the renovation of a destroyed surface.

The first condition of every new formation (except in the epithelial layers) is inflammation. According to J. Müller, inflammation is "compounded of the phenomena of a local injury, a local tendency to decomposition, and an augmented organic activity which energetically strives to maintain the equilibrium against the tendency to decomposition." What Müller calls the "local injury," Virchow calls the pathological stimulus. He says (Spec. Path. u. Ther., i. 72):—"As long as only functional disturbances are observed to follow on an irritation, so long do we speak of irritation; if nutritive disturbances are observable in addition to the functional, we call it inflamma-

tion." He then further calls nutritive disturbance what Müller calls the local tendency to decomposition. Virchow insists quite specially upon the third factor, the effective activity of the inflamed cells. The most striking phenomenon in inflammation is the increased flow of blood to the part where the new formation is to take place, showing itself in redness and increased heat. The law, that the partially increased or diminished blood-pressure accommodates itself to the need of blood in the several organs, is hardly ever to be explained from physical causes alone, since the propulsive action of the heart is uniform in respect of the whole circulation. So far then as the phenomenon is not to be explained by the increased active absorption of the inflamed cells, there must be assumed a direction of the physical circumstances through the willing of the means to accomplish the represented end. (In the normal course of development, an increased congestion takes place at the age of puberty, during pregnancy, and in the abdominal vessels of the bird at the time of brooding; a diminution when the organs cease to be functional, or irreplaceable members have been lost. No less wonderful is the permanently fluid condition of the blood within the blood-vessels, whereas it immediately coagulates on issuing therefrom, even without coming in contact with air.)

In every section of the animal body vessels are cut through; these must first of all be closed, which takes place through the coagulation of the outflowing blood. In the larger trunks an inner and an outer plug is formed, which is easily detached soon after its formation, if the flow of blood is increased by external stimulation. In arteries, where the pressure of blood is considerable, the organism is sometimes helped by a swoon. The coagulated mass does not, however, enter into any firm union with the walls, but, like every means of relief employed at an earlier stage of the healing process which has become unnecessary, is subsequently absorbed. After about twelve hours, a

pale fluid (plastic lymph) is secreted, which generally immediately afterwards condenses to a membranous opaque neoplasm, which closes up the wound and becomes concrescent with the neighbouring parts. The neoplasm is not mere exuded blood serum, but a secretion from the blood of just as definite a character as any other fluid secretion. It is also no amorphous pulp, but a network of cells thoroughly permeated by copious intercellular fluid, and is formed by proliferation of the connective tissue which has been laid bare by the wound. It forms the matrix for every organic new formation, and blood-vessels, sinews, nerves, bones, skin, all proceed therefrom by gradual change of the cells. "The first step to healing then consists in this: Abundant cells come into existence by means of (?) inflammation, especially in the neighbourhood of the capillary vessels. These are changed by proliferation of their nuclei into cell-cones, and successful artificial injection of the blood-vessels proves that then *fine passages* without special walls are made between the new-formed cells, into which the injected mass *directly* penetrates *from the capillaries*. Accordingly there arises a provisional course for the blood, which presents the appearance of an *intercellular* net. The same process takes place from the opposite surface of the wound, and thus it happens that through the contact of these paths, several of which expand and become actual vessels, the disturbed circulation is restored to its normal state." (Dr. Otto Barth in the "Ergänzungsbl.," vol. vi. p. 630.) In this way, in the first instance only, the plexus of capillary vessels is restored; subsequently, however, also larger blood-vessels are brought again into connection after reabsorption of the plugs. In the Achilles' tendon of a dog, the regeneration of an excised piece, five lines in length, within four months has been observed, and in nerves from which a piece was excised, a gradual approximation of the two ends, with or without final union. Movement and sensation can in this way be restored with-

out the newly formed mass, even when it exhibits fibrillation, exactly corresponding to tendons and nerves proper, the correspondence being even less close in the case of muscle; but the assimilation of the new formation to the old gradually increases.

When a tubular structure is severed, the neoplasm first forms an envelope, called a sheath or capsule, which by means of its vessels brings the injured part also into organic connection with the circumjacent structures. Thus, *e.g.*, in the case of the fracture of a bone, when the sheath hardens into the provisional callus. At the same time, both openings of the medullary cavity are closed by a similar callus, formed from the lining membrane of the bone. Meanwhile the terminal surfaces of the bone are so far involved in the inflammation of the circumjacent parts that they themselves pass into a state of inflammation, and can give rise to a neoplasm, which, as a whole, is slowly converted from a firm jelly into true cartilage, and then gradually ossified; although, according to Virchow, osseous or marrow cells can also arise directly from it, as, according to the same authority, all three, cartilage, bone, and marrow cells, may be directly converted into one another. Whilst this process is effecting the renovation proper, the expedients of the intermediate stages, the provisional callus, as well as the gelatine contained in the circumjacent parts, are softened and reabsorbed, the medullary cavity also restored, the dense substance of the callus becoming first cellular, then thinner and thinner, and finally disappearing. The bone recomposed in this way exhibits an uninterrupted connection with the old ends, and exactly the same formation in substance and vessels. An excavation of the radius and ulna of a dog six lines in length was completely filled with bony substance after forty days. If the inner layer of a piece of bone perishes, the regeneration begins from the outer one, and conversely, if the whole bone perishes, the membrane inside the bone and periosteum replaces it, after being first freed from bone.

Should these also perish, the piece in question is enclosed by a new piece, which is formed partly of the ends of the bone which have remained sound, partly of the surrounding soft parts.

In canals which are formed of mucous membrane, as the intestinal canal, or excretory ducts of glands, this neoplasm likewise forms a capsule or sheath, on the inner side of which the particular canal is re-formed, whilst the dead edges of the old piece are thrown off and carried away by the newly formed canal. In the case of displacement of the intestines or strangulated hernia, pieces of the intestine several inches, nay, even a foot in length, are often removed through the anus, and the digestive canals are restored. Is it possible that the rejection of a strangulated piece of intestine is regulated by another principle than that which governs the rejection of the claw of an injured crab, or the casting off of a spider's leg?

If the external surface of any structure is destroyed, it is replaced in the same way, and the process is, on the whole, a higher one than in the case of union of severed parts, because the catalytic action of the homogeneous adjoining tissue can exert far less influence. The neoplasm appears here in the form of granulations, *i.e.*, it is richer in vessels, and exhibits a number of reddish prominences. In this way new skin is formed on a part laid bare, which, at first, owing to the absence of a substratum of fat, lies closely on the muscles, but later on resembles the rest of the skin. Suppuration only occurs spontaneously, when the injury has been of such a kind that the parts of the tissue are to a great extent rendered incapable of continuing the vital functions (mortified), so that it is necessary to separate, *i.e.*, to reject, these mortified tissues from the organism, and to replace them by new formations (*e.g.*, in contusions, gunshot wounds, &c.) When this task is accomplished, the suppuration ceases as spontaneously as it occurred; when there are no parts to be thrown off, the

healing takes place "*per primam intentionem*," without any suppuration. It is true suppuration occurs only too frequently here also, just as in the former case the suppuration often continues beyond the requisite extent, sometimes even to exhaustion, but it is not then a suppuration which is spontaneously set agoing by the organism, but one produced and relatively maintained by injurious external influences, namely, through the germs of parasitic organisms floating in the air, which may make the slightest wound become malignant and fatal. The disinfection, by dressings of carbolic acid, &c., of the air thus reaching the wound obviates these injurious external influences, and thus experimentally proves the correctness of the above assertions.

Mucous membrane can change into epithelium if it is necessitated by abnormal circumstances to form an external surface (*e.g.*, in the case of prolapsed and everted rectum or uterus). In amputations the organism produces a stump which encloses all the hitherto existing canals (medullary cavity of the bone and vessels), and serves for the present use of the limb. The bone is well rounded off; the two bones of the fore-arm or leg, by growing together at the lower end, obtain the firm connection which is usually given by the wrist or ankle-joint; the vessels and the afflux of blood are limited to this now diminished need, and the stump forms a strong fibrous skin, which quickly scales. The fibrous structure of the stump also partially extends to the adjoining muscular fibres, nerves, and now useless vessels.

Let us now turn to some other remarkable phenomena of the *vis medicatrix* in man and mammals.

A complete regeneration of the crystalline lens has often been observed in mammals from whom it had been removed, and even in human beings couched for cataract an imperfect regeneration of the lens sometimes takes place. If after such an operation the upper lip of the wound of the cornea protrudes and cleaves to the outer edge of

the lower lip with its inner edge, both lips afterwards become soft and swollen, and, when the swelling is lost, both are found to be in the same plane. In this way the disturbing effect is obviated, which such an unevenness of the cornea would necessarily produce in respect of vision. When an osseous fracture cannot heal, the organism seeks to help itself in some other way. The fractured ends close and round themselves off, and are either kept together by a fibrous cord into which the callus-sheath has been converted, or by a cylindrical ligament, or united by a so-called false joint, the one end forming a cavity which receives the other spherical end. Both ends are enclosed by a fibrous capsule, and, like other places exposed to friction, receive the requisite lubrication by means of a newly formed synovial sac. A similar process takes place in limbs which have not been set; the abandoned socket is filled up, and at the place where the head of the joint now lies there is formed a new one with the other appurtenances of the joint.

Very remarkable is the formation of excretory passages answering a purpose, when certain secretions in the interior of a structure have no natural vent, and unless such were formed would destroy the organ. This is especially the case in all normal secretions, when the natural drains are stopped up; fistulæ are then formed by the nearest, or rather the most suitable path, making a way outwards (*e.g.*, lachrymal, salivary, bilious, urinary, fæcal fistulæ). They perfectly resemble the normal excretory ducts of the glands, in that the cellular tissue is converted at the walls of the passage into a mucous membrane *insentient to the particular matter* carried off. They cannot possibly be healed over so long as the natural outlet is not restored, but then they heal of themselves quickly and easily. One cannot see any material reason why this secretion, which is certainly obliged to establish an excretory channel through dissolving and liquefying the cellular tissues, effects this considerable destruction only *in the*

one direction of the channel, whilst on all other sides the attacks are proportionately too evanescent for the purpose; why the direction in which this violent chemical decomposition is manifested is precisely the *most appropriate* for the new drain, and why this drain shows not merely signs of destruction, but rather of organic reconstruction. Sometimes such channels, especially in the case of pus-fistulæ, extend through several other organs before they can reach the outside, *e.g.*, from the liver to the stomach or the intestine, or through the diaphragm into the lungs. This process is perhaps most remarkable in internal mortification. The excretory canals (or drains) then arise, if merely the inner layer of a bone perishes, in the vicarious external layer; but if this also perishes, in the new environing bony substance *from the very commencement of its formation*, and moreover, *without* suppuration being perceived. They are round or oval canals, lined with a smooth membrane, passing from the membrane inside the bone to the periosteum, open externally by a smooth edge, and are subsequently prolonged by means of a fistula to the outer surface. They cannot in any way be permanently healed over as long as dead pieces of bone lie within the newly formed bone, but close spontaneously when these have been removed.

Connected to a certain extent with the foregoing is the killing and shrivelling of the embryo, the evacuation of the remains by newly made paths, or the encysting of these remains when child-bearing is impossible.

Further worthy of note is the elaboration of a particular secretion by quite other organs than those properly concerned with this secretion, when the latter are incapable of performing their functions. The secretions, which play so great a part in the economy of the organism, are, as is well known, never present in the blood as such, but always only *in their elements*, and only during and after separation from the blood obtain their proper chemical composition (wherefore, also, the secretory courses are longer the higher

the nature of the secretion). We must therefore usually look upon the organs of secretion as the cause of the special chemical nature of the secretions. So much the more must it surprise us that, under certain circumstances, when this or that organ cannot perform its function, but yet the retention of those matters in the blood which heretofore were separated out of it by means of secretion might become dangerous to the organism, that under such circumstances other organs also are able to perform this act of secretion in an approximately similar way, and thus to secure the continued existence of the organism. The material expedients, which the unconscious will makes use of for this end, can only be looked for in a temporary change of the secreting membranes of the vicarious secretory organs, whereby they are accommodated to their vicarious secretions, just as we observe such an influence of the will on the secretory organs in terror, anger, &c.

Let us look at a few examples. Urine acts as such fatally in the blood; in the blood there are only its elements, but these, too, require to be excreted if the organism is not to be destroyed. In guinea-pigs whose renal arteries had been ligatured, peritoneum, pericardium, pleura, cavities of the brain, stomach, and intestines secreted a brown fluid redolent of urine; the tears also smelt of urine, and the testes contained a fluid very similar to urine. With dogs there ensued vomiting of urine; in rabbits, fluid discharge of the bowels. In men, whose sweat has possessed a decided odour of urine, post-mortem examination usually brings to light causes of suppressed urinal secretion. With persons in whom the ordinary passages have been completely obstructed, daily vomiting of urine has often been observed for years. In the case of a girl with such a constitution, evacuation took place through the breasts till her fourteenth year. In other cases of suppressed urination, urinal discharge showed itself through the skin of the armpits. Also in degeneration of the kidneys, when the

latter could no longer secrete urine, or when there was a want of connection with the bladder, normal micturition is said to have been observed for years, whence some would infer a vicarious capability of the bladder itself for the secretion of urine.—A great number of observations proves the secretion of lacteal moisture through the kidneys, the skin of the navel, the groin, thighs, back, ulcers, and peritoneum, on inflammation of the peritoneum which had arisen in consequence of suppressed lacteal secretion. In that mode of formation of jaundice where the action of the liver (as subsequently shown by dissection) has been arrested, the secretion of bile must take place in the minutest blood-vessels, since all the organs, even fibrous tissue, cartilage, bones, and hairs, are penetrated by the coloured constituents of bile.

A very remarkable phenomenon is the constancy of the temperature of warm-blooded animals under the most varied changes of external circumstances. We are far from being acquainted with all the circumstances whereby this constancy is rendered possible; but this much is certain, that the most efficient, perhaps the only, factors independent of the animal itself, are the regulation of the quantity of food, the excretions, and respiration. Now, since the constant temperature of a class of animals is manifestly that most favourable for its chemical processes, we must recognise an act of nature's sanative power in every act of the organism which accommodates the conditions to changing circumstances. The observation that the quantity of cutaneous as of pulmonary respiration (of carbonic acid and water) varies in brief intervals without perceptible cause, but in longer intervals of several hours remains pretty constant, is manifestly connected with this.

Noteworthy is the mechanical and chemical capacity of resistance on the part of living tissues, which immediately ceases with death. It is best observed in the stomach and intestines. The gelatinous Medusæ digest animals provided with spiny cuirasses without being

injured; the stomachs of birds comminute pieces of glass and bend iron nails without being wounded (for stomach-wounds notoriously heal very slowly, and would accordingly not easily escape observation). The intestinal canal of Plaice and Blennies is often entirely stopped up with sharp mussel-shells, and after death is cut through with a little shaking. As a greater mechanical solidity of the living tissue is not to be thought of, these phenomena are only explicable by reflex movements, in consequence of which the part threatened on occasion of a movement of the sharp object gives way, and the other parts bring the sharp object into a less dangerous position. Just as wonderful is the resistance which the stomach opposes to the chemical attacks of a particularly pungent gastric juice. There are examples where the degenerated gastric juice began immediately after death to destroy the stomach, and also decomposed a fresh animal's stomach, without any injury occurring during life. The like takes place in other acrid secretions and their secretory organs.

After these examples, let us proceed once more to the refutation of some objections to the *vis medicatrix* as a purposive manifestation of unconscious volition and ideation. Although I think that I have proved by many reasons the utter insufficiency of materialistic attempts at explanation, still it seems important once more briefly to indicate the unsatisfactory character of the two chief materialistic arguments. They run thus: (1.) The existing assimilates the freshly added material by catalysis and cell-growths; and (2.) the constitution of every secretion is dependent on the constitution of the nutritive fluid and the secreting membrane.

The first statement is refuted by the fact that new formations take place in the body at different times, which receive no assistance from similar tissues, because they either altogether, or at this particular part of the organism, appear for the first time, *e.g.*, at the different stages of embryonic development, birth, puberty, and

pregnancy. But besides the fresh formations and secretions, several secretions are periodical, whether normally or morbidly, and then also the recurrence of the secretion cannot arise from the contact of the secretion, since this is non-existent. In the same way the regeneration of solid structures is not directly dependent on the seat of development. Thus, *e.g.*, we have seen that the neoplasm for the required renovation of the bony mass has also in great part exuded from the other neighbouring tissues. In the same way mucous membrane is formed in fistulæ, and skin on granulations without contact with similar tissues. As little, then, as one can fail to acknowledge, on the one hand, that this principle of assimilation by catalytic action offers a remarkable expedient for husbanding energy in the economy of the organism, so little, on the other side, can the facts be ignored, which show that the unconscious will can produce a state of things in the organism wherein products may be formed according to chemical laws, which are not caused by adjoining similar tissues, but which are most accurately adjusted to the present life-stage or momentary need of the organism.

As concerns the second point, the dependence of the secretion on the secreting membranes, this principle is likewise in general correct; only one must not forget that the difference of the secretions of one and the same organ at different times, the fresh introduction of secretions at certain vital stages, the intermittence and recurrence of others, as well as the doctrine of vicarious secretions, still leaves open the question with regard to the inconstant character of the secreting membranes; that thus the phenomenon is correctly explained so far as its proximate efficient cause is concerned, but that this efficient cause, on its side, only admits one ultimate explanation, namely, an ideal one. With such provisional explanation the man of science has done his nearest duty, and nobody will impugn it, if he only grants that the question is just as open as before, if only he does not assert that he has

achieved *everything* by this proximate explanation, for then he immediately comes into collision with the facts.

Another objection is, that the procedure of the organism is not always suitable, but that the same phenomena which at one time effect a cure at another time produce disease, or aggravate an existing morbid condition. I hold this to be entirely untrue. I assert, on the contrary, in the first place, that diseases *never arise spontaneously* from the *psychical basis* of the organism, but that they are *imposed and thrust on it by disturbances from without;* and, secondly, that all the changes effected by the organism in the normal condition of its functions with direct reference to these disturbances are adapted to their removal; assertions which I shall at once proceed to make good.

The first question is, What is disease? Disease is not abnormity of form, for there are abnormal forms, as giants, dwarfs, excessive number of fingers, irregular course of veins, which nobody accounts diseases. Disease is not a state which endangers the continued existence of the organism, for many diseases do not do this. It is not a state which causes pain and trouble to the consciousness of the individual, for this, too, is not the case in many diseases. Disease is an *abnormity in the organic functions*, which certainly may have abnormities of structure both as cause and as consequence. In the former case we are wont to term even abnormity of structure disease. Taken strictly, however, another abnormity of the functions must have preceded this abnormal formation as its cause; for as long as all functions are exercised normally, the occurrence of abnormal formations is impossible. *E.g.*, phthisis may be caused by tubercles; these can be inherited, but in the individual from which the tuberculosis of the family takes its rise, the tubercles, in case they are not again inherited or grafted by contagion (through tuberculous nurse's milk, milk of tuberculous cows, inhalation of the products of decomposed pulmonary tubercles, &c.), must necessarily have arisen through abnormal functions. When thus we

investigate into the cause of a disease, we must in every case come back, in the last resort, to an abnormity of function with normal structure of the functioning organs; for as long as structural abnormities co-operate, we have not tracked the causal series to the end.

If we now ask how the primary cause of all diseases, *abnormity of function with normal structure*, is possible, experience and speculation agree in answering, Only through disturbance from outside, but not from within through a spontaneous psychical act of the organism. These disturbances may be of very various kinds:—(1.) Mechanical influences, as all kinds of inner or outer injury. (2.) Chemical influences, (*a*) through the introduction of substances which directly disturb the normal relations by causing new combinations, *e.g.*, in poisoning by arsenic, sulphuric acid, most mineral medicines; (*b*) through chemical contagion, infection in the widest sense, also by atmospheric changes which predispose to diseases not properly infectious. (3.) Organic influences, introduction of (microscopically minute) vegetable or animal organisms, which, feeding on the body and propagating, disturb the chemical composition or the morphological cell-structure of the affected organism. In many diseases it is still doubtful whether their infectious character is to be referred to chemical action by contact or to organic germs (*e.g.*, plague, syphilis, variola, diphtheria, typhoid fever, cholera, intermittent fever, &c.), although the latter is ever gaining more probability. (4.) Abnormity in the proportion of the ingesta and egesta. If the latter preponderate, there ensues loss of bulk, weakness, &c.; if the former, generally hypertrophy, which is manifested in different forms according to the matters in excess (tubercles, scrofula, gout, obesity, &c.) (5.) Unsuitable quality of the ingesta, producing disturbances in the digestive organs, and through abnormal composition of the blood also in the nutrition. Bad air can in this way, by altering the composition of the blood, produce putrid fever, &c. (6.) Im-

proper modes of living, *e.g.*, absolute inaction of a muscle produces weakness and atrophy, since its alimentation is based on the supposition of movement. Sedentary occupations disturb digestion on the same ground, and transference to a foreign climate demands accommodation of the body to the new environment, or is followed by disease. (7.) Inherited bodily defects or tendencies to disease. Here the primary external causes of the disease are to be found in the act of generation, where the transmission is effected, and all succeeding members of the family inheriting the disease receive at birth the fatal germs as their portion on the journey of life, which the remedial energy of Nature is just as little able to cope with, as a chronic illness directly aroused by outer disturbances.

I believe that all diseases may be referred to these or similar disturbances, if it be always at the same time borne in mind that one has to go back to the first cause of the phenomenon, and not to consider the superficial symptoms of the disease itself. Nay, even the latter is frequently already an act of the *vis medicatrix*, the crisis of a series of preceding diseases or abnormities, which are only more or less withdrawn from consciousness (thus, *e.g.*, in all eruptive diseases, gout, fevers, inflammations, &c.) The *vis medicatrix*, with its crises, sometimes even anticipates the outbreak of that disease which must result from an abnormity of formation (as, *e.g.*, in the killing and evacuation of the fœtus which could not be born); and so far it is correct that phenomena are called forth through spontaneous psychical acts of the Unconscious in the organism, which we term disease, because they are abnormal, and in part painful processes. In that case, however, they only obviate a more dangerous disease; they are the choice of a lesser evil intentionally called forth to avoid a greater one, and are thus, strictly regarded, processes not of disease, but of healing. It may also happen that death ensues in this spontaneously evoked crisis, because the

unconscious will does not possess sufficient power for getting the better of the disturbances; but then it would quite certainly have occurred without the test of a crisis, whilst there was the bare possibility of the *vis medicatrix* being victorious. Should some diseases still remain inexplicable as external derangements, this would not impair the correctness of the principle that the psychical basis of organic formation cannot become diseased, for almost all the facts tell in favour of this principle, and none against it, since the tracing back of the few exceptions to external disturbances may be expected from the science of the future. I cannot, therefore, adopt the hypothesis set up by Carus to explain the similarity of diseases, viz., that the IDEA of the organism is, as it were, seized and possessed by the IDEA of a disease. The fact seems to me sufficiently explained by the similar reaction of similar organisms on similar disturbances; and, in truth, the same disease never wears precisely the same appearance, but is at least as different as the individuals themselves. This circumstance alone tells against the above hypothesis, that no pathological formation has yet presented itself, which has not its prototype in normal physiological formations. Virchow says (Cellularpathologie, p. 60): "There is no other kind of heterology in morbid tissues than the improper mode of origination, and the impropriety consists in this, that a tissue is produced at a place or time when it should not have been produced, or in a degree which deviates from that of the typical form. Every heterology is then, more exactly characterised, a heterotopy, an *aberratio loci*, or an *aberratio temporis*, a heterochrony, or, lastly, a merely quantitative deviation, heterometry." The theory of ideal types of disease, which take possession of organisms, could only have a certain figurative authorisation where animals or plants are the causes of disease, as in prurigo, rot, corn-blight, &c., *i.e.*, in the science of parasites, in the modern sense of the term.

As concerns the so-called mental diseases, the tradi-

tional, and, in spite of opposition, still generally accepted view, is, that every disturbance of conscious psychical action is produced by a disturbance of the brain, as the organ of consciousness, whether this cerebral disturbance be brought about directly or through disease of the spinal cord and nerves. Even where psychical shocks bring on mental disease, we must probably assume a cerebral diathesis, mostly inherited, which is only revealed by such an exciting cause. Without doubt, even in these cases, a disturbance of the brain is to be assumed as the cause of the disturbance of consciousness, this disturbance of the brain being provoked, indeed, not by a material, but by a psychical shock, but at all events produced by an external influence, of which the conscious mental states are only reporters and interpreters. The proposition *that the Unconscious itself neither falls sick nor can produce sickness in its organism,* but that all sickness is the result of a disturbance from without, thus remains unimpeached.

As for the second point, the doubtful propriety of the precautions of the *vis medicatrix* against disease, the most important factor, which must not be left out of sight, is the limitation of the power of the will in mastering its circumstances. If the will of the individual were omnipotent, it would not be finite and individual; accordingly there must be disturbances which it cannot get rid of. As now the points in the organism which the will can lay hold of are likewise very limited, *i.e.*, its power has very different limits in different parts, a preconceived end must naturally often be reached by the most wonderfully circuitous paths, so that the representation of the end with the means employed by the organism often entirely escapes the unpractised eye, and is only understood by the profounder glance of science, which perceives the impossibility of shorter cuts to the goal. As now scientific Physiology and Pathology are still so young, one need not be surprised if they even yet have only penetrated a very little way

into the operations of organic life, and if they must often have to put up with a guess concerning the multitude of connecting links, but also, and more frequently, fail to settle the question whether there might not have been a still more appropriate course than the one actually chosen. Every perceived adaptation is proof positive of psychical action not to be invalidated, but a thousand ill-understood connections of cause and effect can afford no negative argument against the existence of a psychical basis. This is by no means, however, the state of the case, but in almost all instances where we see a manifestly unsuitable action on the part of the organism, we can render a satisfactory account of the phenomenon. The spontaneous origin of disease, which might also have been included in the list, has been already dealt with. A great number of other cases are accounted for as follows:—The means offered for getting rid of the disturbance do not conform to the intentions of the organism, because disturbances from other quarters prevent this, so that by a second malady the efforts to suppress the first are rendered fruitless. This case is of very frequent occurrence, only it is often difficult to discover the second disturbing cause, which may be very deep-seated, and at the same time be very insignificant in itself. In the last resort it is then always again the insufficient power of the individual will (in the present instance in setting aside the second disturbance), whereby the means applied are misdirected, and do not lead to the goal. A special case of insufficient power is when, on a particularly intense strain in a certain direction, the will is not able to keep within definite bounds. Thus, *e.g.*, in the healing of a broken bone, when an active tendency to the formation of bone is required, the surrounding portions of muscle and sinew mostly become ossified also; but in that case the organism afterwards repairs its error as far as possible; thus, in the present instance, the ossified contiguous parts are reduced after healing to their normal condition.

How limited is the power of the individual will is also shown by the following example:—During pregnancy, when the unconscious will must be concentrated on the formation of the child, occasionally osseous fractures will not at all heal, whilst after a successful delivery they heal quite well.

The last possible objection would be this: The appropriate reaction follows on every disturbance in virtue of a mechanism provided for the creature, without the participation of the individual pysche. Whoever has followed my exposition thus far will require no refutation of this. We have seen the impossibility of a material mechanism; that of a psychical one is evident to any one who weighs the endless multiplicity of the disturbances which occur, and considers that the function of each single organ, as of the whole body, is no other than that of ceaselessly warding off and neutralising approaching disturbances, and that only in this way is existence maintained. Accordingly, if the fitness of these compensations for the purpose of self-preservation be once granted, it is impossible to avoid the idea of an individual providence, for it can only be the individual itself that conceives the purpose according to which it acts. The truth which emerges so clearly in this and the foregoing chapter cannot fail to reinforce the refutation of the same objection in the case of Instinct, since we have already recognised a fundamental resemblance. It would be folly to suppose a special instinctive faculty, a special faculty for reflex movement, a special faculty for the *vis medicatrix*, since in all these phenomena we have perceived nothing more than an adaptation of means to an end unconsciously presented and willed, and it is only the different kinds of exciting external circumstances that call forth different classes of reactions, whereby, however, the differences are not so pronounced that they do not shade into one another. That the healing operations in the organism are not results of conscious thinking and willing will be doubted by nobody who reflects how

small a share his consciousness has had in the healing of a wound or a fracture; nay, the most powerful curative effects take place at the time when consciousness is as far as possible in abeyance, as in deep sleep. To which may be added, that the organic functions, so far as they are at all dependent on nerves, are regulated by sympathetic nerve-fibres, which are not directly subject to the conscious will, but are innervated by the ganglionic centres from which they spring. If, nevertheless, there reigns in the organic healing functions so wonderful a harmony tending to a single goal, this can never be explained by the material inter-communication of these different ganglia, but only by the unity of the over-ruling principle, the Unconscious.

VII.

THE INDIRECT INFLUENCE ON ORGANIC FUNCTIONS OF CONSCIOUS PSYCHICAL ACTIVITY.

1. The Influence of the Conscious Will.

(*a.*) *Muscular Contraction.*

Muscular contraction is manifestly by far the most important organic function dependent on conscious volition, for it is that whereby we move and act on the external world, through which we communicate in speech and writing. It takes place through the influence of the motor nerves, by a nerve-current flowing from centre to periphery, a current which is evidently related to the electrical and chemical streams, as we find them to be convertible, and of whose intensity we can form no mean idea when we see the contracted muscles of the athlete, attached to the long lever arms of the limbs, moreover, sporting with hundredweights, and then consider what colossal galvanic currents would be required to lift such a load with an electro-magnet. We have already seen that any muscular movement is explicable only by the repeated intervention of unconscious volition and thought, because otherwise it would not be apparent, how the motor impulse could affect the part of the nervous centre answering to this consciously represented movement rather than any other. We have further seen that the more immediate centres for most movements lie in the spinal cord and medulla oblongata, and that these movements are there so determined

and ordered that they are to be looked upon as reflexes of these centres, occasioned by the stimulus of a relatively small number of fibres proceeding from the cerebrum, so that the first motor impulse must be referred to the central endings of these fibres in the cerebral hemispheres. It may well be that several of such reflex actions take place in different nerve-centres more and more remote from the brain before a complex movement is executed, that, *e.g.*, in walking, at first some few fibres carry the impulse over from the cerebrum, where the conscious will to walk arises, to the cerebellum (the organ which is said to co-ordinate the larger motor groups), that then from there a larger number of fibres carry forward the impulses to different centres of the spinal cord, and finally to the crural nerves. On occasion of every such reflexion the unconscious willing and conceiving of the specific motor instinct of the particular centre chimes in, and thus it becomes explicable how such complex movements run their course appropriately and orderly without any mental effort whatsoever. In every centre the impulse is felt as stimulus and converted into a new impulse, so that in the strictest sense we can only speak of the motor nerve-current from the last centre.

The question now arises, how the will is able to produce the innervating current. We can only fall back on the analogies of the related and (physically) better known currents, and on the *a priori* suggestion, that the entire apparatus of the motor nervous system has probably been inserted in the organism with the object of making it possible for the will to produce the necessary mechanical effects with the smallest possible mechanical effort; in other words, that the motor nervous system is a mechanical power like the winds, or more truly as the wall-shattering ordnance, to which the individual man has only to apply the match. To produce mechanical motion without mechanical energy is impossible, but the energy which ushers in the movement may be reduced to a

minimum, and the remaining part of the work can be handed over to forces previously stored up for use. In artillery this is the chemical energy of the powder, in the animal that of the food, which therefore must stand in the same relation to muscular energy as the quantity of powder to the force of the shot. Without *some* mechanical energy, however, the stored-up forces cannot be liberated from their imprisoned state; accordingly the will must, at all events, be made capable of performing mechanical work. If, however, the quantity of this energy were of no consequence, it could put the muscles into motion directly; we must therefore assume that the critical point of the motor system consists in this: How to reduce the necessary mechanical performance of the will to a minimum,—somewhat as the regulating of the levers by the engineer represents a minimum of effective energy in relation to the performances of the steam-engine.

Looking now at the current which doubtless has most affinity with the nerve-currents, viz., the electrical, we must, in the first place, exclude the mode of origin by mechanical influences (as friction) or heat, because the former would be just the opposite of what we are in search of, and the latter likewise consists of vibrations with considerable mechanical oscillation of the atoms. We must in any case disregard modes of production which depend on displacement of the molecules, and keep to such as require only a rotatory motion of the same, since rotation requires infinitely less application of force than displacement. Here the results of nerve-physiology come to our aid, which show that, whilst the motor-current is traversing the nerves, all the molecules of the latter exhibit an electrical polarity in the same direction, as in the magnet, whilst in the completely indifferent state (which, it is true, does not occur during life) the polarities of the molecules have no definite arrangement, as in non-magnetic iron, and thereby neutralise one another. We learn from these experiments that the nerve-molecules possess polarity, and

that the poles, by rotation of the molecules, may be brought into the same direction. As the iron rod, surrounded by a wire, becomes magnetic as soon as a galvanic current traverses the wire, so, if in any way the iron were suddenly magnetised, a galvanic current would be called forth in the wire. In an analogous way, through rotation of the molecules, so that their polarities are turned in the same direction, is a nervous current produced.

We see in Physics that the polar oppositions of the molecules are the foundations of all the phenomena which we designate chemical, galvanic, frictional-electrical, magnetic, &c.; we have therefore no reason to doubt that many similar phenomena have the same origin, and that one of these is the nerve-current. The rotation of the molecules in the centres is thus the minimum of mechanical work, which is left to the will, and the polarity of the nerve-molecules is the reserved mechanical energy, which liberates the store of mechanical power in the muscles, which is exhausted by prolonged activity, and is again restored in repose through the chemical replacement of material. Thus every organism is comparable to a steam-engine; it is, however, also at the same time stoker and engine-driver, nay, repairer also, and, we shall subsequently see, even its own fabricator.

As the mobility of the molecules is in all respects greater in the fluid state of matter than in the solid, nerves are semi-fluid; but as, when encountering an external shock, the molecules of fluids do not keep their places, but are subject to considerable displacement, nerves are not quite fluid; and hence structures, which carry on operations analogous to the nervous, are the better fitted for their work, the more they possess such a semi-fluid constitution as well as polarised molecules. Accordingly the gelatinous bodies of the lower aquatic animals, all animal germs, the plastron, the earlier embryonic conditions, the clotted neoplasm, once in a state of plastic fluidity, from which all new formations of the *vis medicatrix* proceed,

and the protoplasm of the lower and higher plants, are adapted to this purpose. The first principles of nature being simple, we cannot doubt that also all other effects of conscious or unconscious will in organic nature depend on the same principle of molecular polarisation, especially as the constitution of the structures, in which the will is most directly manifested, is confirmatory of this supposition. Thus we cannot otherwise figure to ourselves the influence of the will in chemical processes, as in new formations from neoplasm or in the development of the embryo, than as a skilful use of the polarity of the existing molecules, partly in the heart of the formation itself, partly by means of currents conveyed to that quarter, which are generated elsewhere.

We at the same time rise above the view that the nerves *exclusively* possess the capacity of conveying the determinations of the will, with respect to which there has been so much dispute. Both the analogies of nerveless animals, as well as the neoplasm and embryo, prove the possibility of voluntary action and sensibility without nerves; but this does not preclude the view, that the nerves are the highest kind of tissue known to us which the will has created to facilitate its action, and that the organism furnished with nerves would as little avoid the employment of the same to mediate its voluntary manifestations, as any one would drive across country instead of along the road. It is, moreover, clear from the foregoing that the power of the individual will could effect infinitely less with the same amount of effort, if the power-engine of the nervous system were not at its command. (Think of the efforts of incompletely paralysed bodily parts.) It would be, however, very hazardous to fix a limit for the exercise of will without the aid of nerves, since the intensity of volition in a certain direction and for a short time can occasionally prove a substitute for an auxiliary mechanism. I shall not point to examples of magic (turning of the magnetic needle by the mere will of the

magnetiser and so forth), because they need stronger attestation for scientific purposes; but various circumstances prove clearly enough that the sphere of action of the will, as well as of sensibility, extends even in Man beyond the range of the nerves. For example, the sudden turning grey of the hair on a violent emotion; the ramification of the motor nerve-fibres in the muscles, according to which the muscular fibres themselves must be conductors of the motor current; the sensibility of the skin throughout its entire surface, whilst the tactile papillæ underlie it only here and there; the action of the nerves on the secreting membranes in their whole extent, whilst the nerves can only touch limited parts; further, the circumstance that even nerveless parts of the human body can be rendered sensitive and painful as soon as their vitality, *i.e.*, the mobility and polarity of their molecules, is increased, owing to accelerated flow of blood and relaxation of tissue; thus, *e.g.*, the new flesh formed in healing wounds is in the highest degree sensitive without any nerves, and inflammation of nerveless cartilage and sinews is even much more painful than inflammation of the nerves themselves. Lastly, examples of embryonic malformations show that parts may be formed without the co-operation of the nerves leading to them, *e.g.*, skull-bones without brain, spinal nerves without spinal cord.

(*b.*) *Volitional Currents in Sensory Nerves.*

One kind of innervation-current we have already become acquainted with as the Reflex Action of Attention. It may, however, be just as well called forth and strengthened voluntarily. The concentration of attention on the organs of generation may be followed by the greatest sexual excitement, and hypochondriacs sometimes feel pains in every part of the body to which they direct their attention. It is said not unfrequently to happen that persons about to be operated on imagine they feel the pain of the

puncture before the operator's instrument has actually touched them. If, when the eyes are closed, a finger be slowly brought to the tip of the nose, and the approximation be very gradual, just before actual contact the imaginary contact is experienced as a sort of itching feeling. If I earnestly concentrate my attention on my finger-tips, I become aware of a distinct sensation therein, a kind of tickling also. In all these cases manifestly the presentation in the brain of the expected sensation, combined with the attention directed to the particular nerves, produces a peripheral current, which returns from the periphery to the centre as current of sensation, whether, as in the first examples, the sensation be essentially produced only by the centrifugal current, or, as in the last example, the current only strengthens the ever-present stimuli, which are usually too weak to be perceptible.

The first case also occurs on occasion of every sensuous perception without sense-impression. The vividness of the idea depends on the strength of the peripheral nerve-current, and this again partly on the interest (participation of the will) in the idea, partly on the individual disposition. There are persons who by voluntary effort can call up visual images, *e.g.*, of a friend, almost with the distinctness of a vision. In others the images always remain pale. If the volitional current flows unconsciously, the recurrent stream of sensation, when sufficiently vivid, presents itself as vision, just as in every dream. I therefore believe that there is no sensuous mental representation in the brain, which is not bound up with a current of innervation towards the particular sense-organ, although such current may not usually extend far beyond the central ending of the nerves of the organ. I think we must conclude this from the fact that the vision only differs from the actual sensuous presentation in degree, wherefore its mode of origin will likewise only differ in degree. We may also assume that the current of innervation radiates from centre to periphery, and approaches ever nearer the sense-

organ itself as the sensuous perceptions are more vividly represented; for persons who perceive indistinctly and weakly feel the strain of attention (which certainly is only a reflex strain of the cutaneous muscles) in the upper part of the head. The greater the faculty of sensuous perception, the more, when attempting to form visual images, does this feeling of tension descend towards the forehead, in the extreme case reaching the eyes themselves, so that the latter feel just as fatigued after a persistent effort of imagination as after a long, steady gaze.

(c.) *The Magnetic Nerve Current.*

The fundamental phenomena of mesmerism or animal magnetism are at length to be looked upon as scientifically accredited. The electrical discharges of the electric ray and eel have long been notorious, and the perception that these effects proceeded from the grey nervous matter was in the main the occasion of the latter being regarded as the essential part of the nervous system. Nevertheless the admission of the perfectly analogous effects of the magnetisers was long resisted, because they were on the whole too weak to be distinctly perceptible to the physicist. I have, however, been repeatedly present at these experiments, and have secured myself from the risk of deception by the most careful investigation of the locality as well as of the person of the magnetiser. If the patient be placed upon an iron bedstead provided with a wire mattress, but in such a way that he is isolated from the metal by a woollen covering, a Leyden jar is in a certain measure produced, of which the bedstead forms one coating, the person lying thereon the other, and by the concurrent flow (influence) of the electricity of the bed towards the isolating surface, the electrical effect of the magnetisation is considerably enhanced. I have allowed myself to be magnetised in this way, and have distinctly perceived an emission of sparks causing a prickling sensation from the

hand of the magnetiser as it gently touched my skin, as if through his touch the chain of a weak induction current or of a rotating electrical machine were closed, but more irregular, according to the fluctuating exertion of the magnetiser. Whoever is acquainted with the feeling will know that it is hardly possible to mistake it. Any one that has ever known the skin-sensation thus produced, can without further trial distinguish with certainty the contact of a magnetising hand (the agent exerting sufficient pressure) from a non-magnetising contact, as I have had occasional opportunity to observe in my own person. Apart from the artificial increase of the electrical effect, the nerve-strengthening and vivifying power of mesmerism, stimulating all the vital functions, is well known, as well as the induction of wholesome sleep, and of favourable crises during the same.

Although the electricity in these phenomena may be only a concomitant or a peripheral conversion of the proper magnetic force, it is still in any case related to these physical forces and the motor nerve current, and probably arises, like the latter, through the alteration of the polar condition of the molecules in the centres. It is, like movement, an indirect effect of conscious will (sometimes also, in the imposition of hands of saints, miraculous cures, &c., quite unconscious), but what exactly, *i.e.*, directly, he does, and how he does it, the magnetiser knows as little when magnetising as on lifting his arm. There intervenes then here, as in all other descriptions of movement, an unconscious will, which brings it about that a magnetic current and no other arises, and that this is concentrated in the hands, and not in any other part of the body. (In order to become acquainted with this group of phenomena in its whole extent, Reichenbach's "Odic-Magnetic Letters," and his larger work, "Sensitive Man," should be consulted.)

(*d.*) *The Vegetative Functions.*

Sympathetic nerve-fibres probably regulate all the vegetative functions of the organism. Conscious will has no direct influence upon them, but we have seen that this is not the case even with the motor and sensory fibres, but that the direct agent is always an unconscious will. If now the conscious will has any influence at all on vegetative functions, the cases are parallel, and the difference can only lie in the degree of facility with which, through the conscious willing of any effect, the unconscious will is evoked to institute means to bring about this effect. Thus, *e.g.*, if I will a stronger salivary secretion, the conscious willing of this effect excites the unconscious will to institute the necessary means, namely, it generates such currents in the sympathetic fibres which lead from the ganglionic endings to the salivary glands as produce the intended effect. This experiment will succeed pretty well with anybody. In like manner the formation of the secretions in the organs of generation is subject to the conscious will, which, when combined with the above-mentioned voluntary excitement of the related sensory nerves, may even lead, in the case of irritable persons, to ejaculation without mechanical stimulation. Mothers are said to be able to produce through this will a more copious lacteal secretion, if the sight of the child arouses in them the will to suckle. The ability of many persons to blush and to grow pale voluntarily is well known, especially in the case of coquettish women, who make a study of it; and there are, likewise, people who can perspire voluntarily. I now possess the power of instantaneously reducing the severest hiccough to silence by my mere will, whilst it formerly was a source of great inconvenience to me, and frequently would not yield to all the ordinary means. That a pain, *e.g.*, toothache, may sometimes, through an energetic effort to subdue it, be soothed or put an end to, is well known,

notwithstanding that, through the requisite attention, the pain is in the first instance increased. In the same way an irritation to cough, which has no mechanical cause, may be permanently suppressed. There have always been people, who have exercised a remarkable power over their bodies, professed jugglers, and such as have cultivated their will-force in other directions, philosophers, magicians, and penitents. From the evidence of these phenomena, I believe that we might possess a far greater voluntary power over our bodily functions, if we had only as much occasion from childhood upwards to institute experiments and to practise ourselves therein as is necessary in the case of muscular movements and mental images; for as children we know as little how to set about bringing the spoon to the mouth as how to increase the salivary secretion. At the same time, however, it is evident that the connecting of the conscious and the unconscious will has been purposely made difficult in this department, because the intervention of the conscious will would generally only be injurious to the vegetative functions and not make matters better, and by such occupation would be uselessly diverted from its proper sphere of thought and external action.

2. The Influence of Conscious Ideation.

The conscious idea of a definite effect can often, without the conscious will, excite the unconscious will to employ the requisite means, so that the realisation of the conscious idea then appears involuntary. Physiology, which is obliged to take notice of these facts, but does not possess the conception of the unconscious will, sees itself driven to make the absurd assertion, that mere idea without will can be cause of an external event. But if one reflects upon it, one finds that nothing more is in fact thereby affirmed than that the notion "Idea" is in these cases imperceptibly widened to the conception "unconscious

will," as discussed in Chap. iv. A. pp. 124, 125. I therefore do nothing more than call this unobserved extension of the general notion Idea by its right name, and represent it as an independent link in the process, since it must be manifestly inadmissible to introduce into a notion already established the marks of another equally fixed notion in addition to its own.

In the first line are ranged gestures and looks taken in the widest sense. In the idea which calls forth the look the effect is not at all included, to say nothing of the means for its production; but the gestures entirely present the appearance of reflex actions, so invariably and uniformly do they follow in all individuals. How conformable to a purpose they are is certainly clear, since without the necessity and universality of the gestures nobody would understand them, and without previous understanding by gestures a word-language would never have become possible, and dumb animals would be deprived of every means of understanding one another; even by far the largest part of those endowed with voice would be deprived of their language. But even among men, wherever we mistrust the speech, we still hold to the expression of the speaker. I dispense myself from an enumeration of the phenomena in question, which may be gleaned from many sources.

Mimetic movements, which are manifestly likewise reflex actions, form the second group of the phenomena. When we see an orator hotly declaiming, or when we look on at a duel, a fencing-match, a bold leap, or a dance, and are greatly interested in the affair, we make similar movements ourselves, so far as our attitude allows, or at least feel the impulse to make similar movements, even if we suppress it. In the same way the natural man is prone to sing the melody which he hears played. If we see anybody yawning, it is very difficult to avoid yawning ourselves; and even more extensive convulsions, as St. Vitus's dance, epilepsy, often act infectiously on suscep-

tible persons through the mere view of them; nay, they can even become complete epidemics of a sect or a tribe. Since in all these cases it is no material influence which forms the bridge, it can only be the idea of these movements which is so vividly excited by the spectacle that it rouses the unconscious will to execute them. Inasmuch as this process takes place within a nerve-centre, and the last effective act of will probably also becomes conscious in this centre, it comes under the notion reflex movement.

The next group contains the influence of conscious representation on the vegetative functions. The influence of the most dissimilar emotions on the functions of secretion are well known (*e.g.*, vexation and anger on bile and milk, terror on urine or stool, voluptuous pictures on the semen, &c.) The idea of having taken medicaments (*e.g.*, laxatives) often acts just as well as the medicaments themselves. The imagination of having been poisoned may actually produce the symptoms of poisoning. Many Christian enthusiasts in the days of the martyrs really felt the martyrs' pains, as hypochondriacs really feel the diseases which they fancy themselves to have, and as young doctors sometimes think they have all possible diseases of which they hear. (There is a remarkable story told of one of Boerhave's pupils, who was obliged to give up the study on this account.) The surest way to be taken with an infectious disease is to be afraid of it, whilst the physician under like circumstances is very rarely attacked. Lively fear and the thought of sickness is of itself sufficient to cause the same, without any infection, especially if it be heightened by the terror of incurring risk. Throughout the whole of the Middle Ages there occur reports of wounds and bleedings in ascetic enthusiasts, and we have no reason to refuse credence to these accounts, when German, Belgian, and Italian physicians of the present century attest as eye-witnesses[1] spontaneous bleeding at

[1] See Salzburg Medical Journal of 1814, i. 145-158, and ii. 17-26: "Account of an Unusual Phenomenon in the Case of an Old Patient,"

certain times. Why should not blood-vessels, if they permit blushing and occasionally allow blood-perspiration, so far dilate as to allow of bleeding through the skin?

Similar cases occur even in secular life. Ennemoser relates as a well-attested story a case where the strokes of a soldier condemned to run the gauntlet are said to have afflicted the body of his sister with like pains and external cutaneous marks. The much-doubted fright of the pregnant likewise belongs here. Most physiologists reject the facts without more ado because they cannot explain them. Burdach, Baer (who relates the case of his own sister), Budge, Bergmann, Hagen (the two latter in Wagner's "Handwörterbuch") thoroughly admit the facts; Valentin, at any rate, does not dispute their possibility in general. J. Müller admits the fright of the pregnant in so far as it is said only to produce arrest of formation, but not as respects the effecting of changes at particular parts of the body. But now, on the one hand, almost every arrested formation is a merely partial one, and, on the other hand, we have so many examples, both of the inheritance of quite partial marks, moles, as well as of partial changes in our own body (as fancied effect of poisons or drugs, wounds of stigmatics), that there is no reason to doubt such partial influence of the maternal mind on the soul of the fœtus, the latter being still in process of organic formation. Whilst I thus recognise the fact of the "fright" of the pregnant, I by no means doubt that nine-tenths of such stories are nonsense, but in strictness very few well-attested cases would be sufficient.

A great number of sympathetic or miraculous cures are allied to the occurrence of signs of poisoning after imaginary poisoning, and to the effects of drugs without any having been taken. As in those cases the idea of the effect evokes the unconscious will to procure the means, and

by Medical Counsellor and Professor v. Druffel at Münster. Further: "Louise Lateau, sa Vie, ses Extases, ses Stigmates." Medical study by Dr. F. Lefebvre, Professeur de Pathologie générale et de Thérapeutique à Louvain. Louvain, Ch. Peters, 1870.

thereby the effect itself, so also here. What is peculiar to the case is the question in what way the unconscious willing of the means is produced through the idea of the effect. The conscious willing of the effect does not seem essential, for in the case of the fright of the pregnant, and in the occurrence of effects which are even dreaded, the conscious will can only be contrary, not favourable, and yet the unconscious will and the effect make their appearance. On the other hand, another factor is indispensable in that part of the phenomena which proceeds from the *personal* will of the individual, and not (as with mother and fœtus) magically through another will, namely, the belief in the occurrence of the effect; for, as Paracelsus finely says, "Faith it is which locks the will." Where, therefore, the conscious will makes a show of opposition with the belief in its own power of resistance, there faith calls up an unconscious will which hinders the effect of the first idea. The question is only, which faith is stronger, that in the occurrence of the effect, or that in one's own power of resistance, according as the unconscious will inclines to the one or the other side? The art in such cures is then only this: to inspire the belief in success, and because men do not perceive this connection, perhaps also such rational belief would be too weak to be effective, over-faith must procure faith, and for that purpose all sorts of hocus-pocus are employed. Of the unconscious will the word holds literally true: "The more will, the more power;" and this is the key to magic.

VIII.

THE PLASTIC ENERGY OF THE UNCONSCIOUS.

In the preceding sections we have not altogether been able to avoid anticipating the theme of the present chapter. This was owing to the intimate connection of the subjects successively treated with the principle of organic formation, being indeed at bottom illustrations of the same, so that the attempt to make any sharp division would only have resulted in the omission of some very remarkable phenomena. We have seen that the term which covers the larger number of facts is that of Instinct; but one may almost as easily include the phenomena under the notion of Reflex Action, for an external stimulus must always be present, upon which action almost of necessity follows, although the reflexes may be of a considerable degree of complexity.

Equally well, however, may all the phenomena in dispute be regarded as effects of Natural Therapeutics, for only when the external stimulus is some extraneous opposing substance can it act as a stimulus, otherwise it is uninfluential. The subduing of the material is, however, an act of the *vis medicatrix*. The special character of the formative principle would then have to be referred to the realisation of the Idea of the species at the appropriate stage of life, whilst Nature's remedial power would consist in the conservation of the realised Idea. It is obvious, however, that, on the one hand, the warding off of a disturbance is only possible by means of new formations, *i.e.*,

that the realised IDEA cannot maintain itself except by development, by the realisation, that is, of a new stage of the IDEA; and, on the other hand, that the realisation of a new stage of the IDEA involves a series of struggles and self-preserving acts. This is so because all points of the organism are threatened with disturbance at every moment; and therefore, in the third place, the moulding and constructive instincts, no less than the plastic energy within the body, work according to fixed ideas, which must be unreservedly looked upon as integral elements of the Idea of the class. Nay, in the wider sense, all other instincts must be conceived as realisations of special aspects of the type; for the typical idea of the nightingale would be incomplete if the particular note were omitted, as that of the ox without butting, or that of the wild boar without the gnashing of the tusks, or of the swallow without the semi-annual migration.

It accordingly only remains for us, in the first place, to make a few remarks with respect to the appropriateness of the organising impulse, and, secondly, to show how the instances of the plastic energy shade imperceptibly into the previously considered manifestations of the Unconscious.

As concerns the adaptations of organic life, on the one hand, goodly volumes might be written on this point alone, and, on the other, the greatest caution is required with respect to teleological considerations in detail, teleology having already fallen somewhat into discredit, owing to the numerous ends that have been foisted on Nature by self-conceited minds, which not seldom verge on the ridiculous and absurd. We can therefore only here throw out some brief hints, which the rather suffice for our purpose as at the present day the knowledge of every educated person is sufficient for their elaboration.

I start from this — that the raising of consciousness presents itself as the purpose of the animal kingdom. Whether one seeks the end of this clearer consciousness

in an increase of enjoyment, or of knowledge, or finally of an ethical moment, the elevation of consciousness always remains the direct end of all animal organisation (comp. Chap. xiv. C.) Why, generally, the embodiment of the mind should form the condition for the origin of consciousness we shall see later on (Chap. iii. C.), but the question we have now to ask is, Why this separation of organic Nature into animal and vegetable kingdoms? The first reason is that for the conversion of inorganic into organic matter, and of the lower into higher organic combinations, there is required such an exertion of unconscious psychic force that *the same* individual possesses no further energy for inward growth, because its force is used up in the vegetal processes. Only when in the main no further advance in the organic chemical composition of matter is required, but on the average a mere maintenance at the stage already attained, or a mere direction of the spontaneous tendency to relapse to lower stages is desired, only then does the individual retain the necessary surplus energy to form the pre-existing matter into the artificial structure of the organs of consciousness, and to urge on the process of inward mental development to the utmost. Hence the separation of Nature into the producing vegetable kingdom and the consuming animal kingdom. But now producer and consumer might still be conceived united in a single being, the vegetable half of the organism *forming* the materials, by the *use* of which the other animal half develops its consciousness. The second reason for the separation of animal and vegetable kingdom is opposed to this, however. Namely, it is evident that an animal bound to the soil on which it grows (as the transitional forms of lower aquatic animals to the vegetable kingdom show) is capable of no extensive experience, and thereby of no higher mental development; locomotion therefore becomes imperative as a condition of a higher stage of consciousness. But now, if the materials of which organic matter is formed (*i.e.*, matter alone fitted to support a

higher consciousness) must for the most part be drawn from water permeating the soil, and an underground absorbing surface of considerable extent (root fibres) is necessary for this purpose, it is clear, that no creatures of the higher grades of consciousness can directly arise from inorganic nature, since locomotion is impossible with such a subterranean arrangement. We see, then, the reason for the mobility of animals and the stability of plants, and in general the ground of a division of the two kingdoms.

Animals must then seek their food, and need for that purpose not only motor organs, but also organs to enable them to distinguish between the substances appropriate and inappropriate for their nutrition, and to execute their movements with accuracy. These are the organs of sense. Further, the organism can only assimilate matter by absorption; this must therefore be in a liquid form. The food of plants is already in this form, but that of animals is generally met with in a solid condition. These must therefore have organs in order to bring this solid food into the fluid state. This purpose is served by the *digestive system*, with its comminuting organs (mouth and stomach), its dissolving juices (saliva for conversion of starch into sugar, gastric juice for solution of albuminous matter, bile for partial saponification of fat, and pancreatic juice for all these purposes taken together), its long canals, and, finally, with its orifice for the evacuation of indigestible matters. The chyle vessels which absorb the chyme are the root-fibres of the animal. Since, on account of its incomparably greater dynamic performances, it consumes far more matter than the plant, provision must be made for a more speedy replacement. This purpose is served by the system of the *circulation of the blood*, which constantly supplies to all parts of the organism new materials in the most appropriate form for assimilation. As the chemical process in the animal is essentially a process of return to an earlier state, *i.e.*, a process of oxidation,

provision must be made for the necessary oxygen. Plants require no special organs for their reciprocal relations with the atmosphere, because their surface, unusually large in proportion to their content, sufficiently effects diffusion. In the animal, however, whose surface, for other reasons, must be many thousand times smaller than that of plants, the necessary quantity of oxygen must be introduced into the body through special internal organs of great superficial extent (bronchial plexus), permitting powerful ventilation, and through a rapid change of the adjacent strata of air by means of vibratile cilia, as well as through a constitution of the dividing membranes favourable to diffusion. This process of oxidation at the same time engenders animal heat, which is a condition of the subtler changes of organic matter, or at any rate spares a great part of the expended energy for the psychical influence.

Thus from consciousness as aim of animal life we have deduced the necessity of five systems—that of movement, of organs of sense, of digestion, circulation of the blood, and respiration. What determines the external form of the body as a whole is chiefly the locomotive system. Its fundamental principle is contraction, as we see already in ciliary movement and the movements of the lower aquatic animals. As soon, however, as the other systems have attained a certain degree of development, the contractile mass requires points of support in the body itself, in order to be able to perform partial movements better, and in more varied directions; especially is this need felt by land animals (even the lowest). These points of support are obtained by means of a skeleton, which is first formed of thickened layers of epithelium or calcareous epidermic layers, afterwards in the Vertebrata of the bony skeleton. These solid parts serve at the same time for protection to the soft parts; thus, among the vertebrates, skull and spinal column protect the brain and spinal cord. The organs for

external locomotion, even in animals tolerably low in the scale, are elaborated into special limbs, which exhibit the most varied modifications, in conformity with the elements, the localities, and the particular food which may be assigned the animal. — To facilitate the reciprocal influence of mind and body there is formed, as a sixth, the *nervous* system, of the significance of which mention has already often been made; and finally, as a seventh, in the service not of the individual but of the race, there is added the *reproductive system.*

This in outline would be the teleological deduction of the construction of the animal kingdom with consciousness as end, whereby the vegetable kingdom appears merely, or at least in the main, only as ancillary to the animal kingdom, in that, on the one hand, it prepares the means of subsistence, and, on the other, the materials of heat and oxygen; for the carnivorous animals also live on the vegetable kingdom, though indirectly. To prove in detail the fitness of the contrivances would, as said already, detain us far too long. I only call attention to the wonderful construction of the organs of sense, where the conformity to an end most strikingly appears. This is almost more the case with the organs of generation, where it is especially remarkable that, notwithstanding the greatest difference in other respects, these organs are always suitable to both sexes of a species, the rest of the bodily form also always allowing of sexual congress. The time of heat among animals is always so arranged that after the fixed period of pregnancy the young appear at the season when food is most abundant. In many cases special parts for the furtherance of sexual congress spring into existence at the time of heat, which afterwards again disappear. Thus, many insects get hooks on the sexual parts for firmly holding the female; the frog has wart-like prominences on the thumbs of the anterior feet, which it inserts into the body of the female; the male of the common water-beetle, sucking-disks attached by stalks

on the three first tarsal joints—the female, on the contrary, furrowing of the wing-sheaths.

Of special interest are the investigations of Dr. J. Wolf on the construction of the human os femoris, communicated in the 50th volume of Virchow's Archiv. That it forms a tube, because it can thus be lighter with the same solidity, was already well known. It is, however, new that the cross-beams and supports, arranged in regular curves (cutting one another at right angles), which break through the bony cavity at the upper and lower end of the bone, are so ordered that they exactly agree with those constructions which are in accordance with the principles of mechanics, when the forces of pressure and of draught of the burdened human femur are taken into account, and the lines of pressure and draught in the interior of the bone are ascertained. Nature, in order to render innocuous the "shearing forces" tending to inner dislocation and dispersion, has thus here realised in an unconscious way those technical rules of mechanics, as they have been applied by the conscious mind only in very recent times, and in a manner still far from perfect, in our modern iron structures (bridges, cranes, &c.)

A common error is that of doubting the adaptation of organisms because certain conditions of fitness which we presume to lay down are not satisfied. That a perfect adjustment in every particular is impossible should indeed be obvious to every one, for otherwise no disease or weakness would subdue the body; it would be immortal. It would be childish to demand that a human cranium should sustain the blow of a hailstone as large as a fist, and declare it to be unsuitable to its purpose because it does not do so, since its adaptation for such exceptional cases would be accompanied by other and far greater inconveniences. Of this kind, however, are most cases where it is asserted that organisms are ill contrived: they amount to this, that contrivances are wanting which would

be appropriate in *certain* cases, but unsuitable in *most* other cases or relations.

Another kind of alleged want of adaptation is due to the constancy of the morphological fundamental types, which forms a thoroughgoing natural law, and only places in a clearer light the unity of all organic forms—the unity of the whole plan of creation. It is the *lex parsimoniæ*, which is verified also in the fashioning of organic forms, in that Nature finds it easier to leave here and there innocuous superfluities than always to be making changes and executing new ideas: she prefers to stop at the greatest possible unity of the IDEA, and only makes just as many modifications as are indispensably necessary. Of this kind are the rudimentary teats among male mammals, the eyes of the blind-mole, the caudal vertebræ in tailless animals, the swimming-bladder of fishes which always live at the bottom of the water, the extremities of bats and Cetaceæ, and so forth.

Lastly, it should be remarked that we must recognise a clairvoyance of the Unconscious in the purposiveness of the creative impulse as in that of instinct, since all organs are developed earlier in the fœtal life than they enter into use, and often even very considerably earlier (*e.g.*, sexual organs). The child has lungs before it breathes, eyes before it sees, and can, indeed, have knowledge of future states in no other way than by clairvoyance, whilst the organs are being formed; but this can be no objection to the plastic activity of the individual soul, since this is not a whit more wonderful than the clairvoyance of instinct.

Let us now pass on to consider the close relationship of organic formation to the operations of instinct.—The nests, buildings, and holes which animals build and make are regarded by everybody as effects of instinct. The Teredo bores for itself with its shell a hole in wood, the Pholas in soft rocks; the Arenicola bores in the sand, and cements the sand into a tube by means of the moisture secreted on the surface of its skin. Some small beetles form for their

tender skin a covering of dust, sand, and earth; the grubs of moths make for themselves tubes of hair or wool, which they carry about with them. The larva of most of the Phryganeæ weaves with the threads produced from its spinning organs wood, leaves, shells, &c., into a tube, wherein it dwells, and which it carries about with it. The larva of the caterpillar needs no foreign material for spinning its cocoon, in order to maintain the necessary seclusion and rest for the future change. Here, then, the dwellings of animals, just as the web of spiders and the covering of skin which some beetle-larvæ form of their excrement, is entirely formed by the organ itself.

Nautilus and Spirula periodically emerge from their hemispherical shell and form for themselves a larger one, corresponding to their growth in the interim, which, however, is united with the old one in such a manner that in process of time the shell of the animal consists of a series of such chambers, ever increasing in size. In a similar way the shells of snails grow with their growth, whilst the Crustaceæ annually burst and throw off their shells by voluntary movement, just as the spiders, snakes, and lizards their skin, birds and mammals their feathers and hair, whilst the skin of the higher animals continually peels.—What we have seen hitherto in the structure as a whole can also be observed in the several parts, *e.g.*, the operculum. A spider (*Mygale cementaria*) lives in a hollow in marl, which it makes fast with a door consisting of a dab of earth hinged on to the web. The vineyard snail in winter closes its dwelling with a lid, which it fashions together with its hinge from exudations of its own body, but which yet is not united in any way with its body. In other snails, on the contrary, the covering is permanently connected with the animal by means of muscular bands. Thus we have arrived at organic formation by a gradual passage from the building instinct, and can we believe that where the junction is so natural the fundamental principles are different? As instinct teaches squirrels

and other animals to collect and garner more copiously when a cold winter is imminent, so dogs, horses, and game acquire in such years a thicker skin; but when horses are transferred to hot climates, after a few years they get no more winter hair. That the cuckoo imagines that its own eggs will have the colour of the eggs of the nest which it has elected to lay them in, has been already repeatedly mentioned. The instinct of the spider directs it to spin, the creative activity gives it the organ for spinning. The instinct of the working-bees leads them specially to collect, and the means of transport correspond thereto; they are even peculiarly favoured by possessing brushes on their feet to sweep together the pollen, and baskets for collecting. The insects, which in accordance with their instinct lay their eggs on freely creeping larvæ, have formed for themselves only a quite short ovipositor; whilst others, which are compelled to lay their eggs in grubs that are deeply concealed in old wood (*Chelostoma maxillosa*), or in fir-cones, have very long ovipositors. The ant-eater, which, in obedience to its instinct, is directed to the white ants, and dies with any other food, has with this object been furnished partly with short legs and strong claws for burrowing, partly with its long, narrow, toothless snout, provided with a filiform adhesive tongue. The owls, which are destined for night-prey, have their gentle, spectral flight, in order not to waken the sleepers. Beasts of prey, which, owing to their digestion, are instinctively destined for flesh-food, have been provided with the necessary strength, speed, weapons, and keenness of sight. As instinct has taught many birds to conceal their nests by assimilating the colour of the same to the environment, so has the creative activity given protection to innumerable beings by causing them to resemble their place of abode (especially parasites). Can it be really a different principle which implants the impulse for action, and bestows the means to give it effect?

Here is the place to refer once more to the phenomenon

of the formation of bubbles presented in *Arcella vulgaris*, which, although manifestly a result of the plastic energy of Nature, yet wears the appearance of an arbitrary exercise of instinct in suitable adjustment to the perceived external circumstances.

As concerns reflex movements, we see a great number of the digestive processes effected by them. From the act of swallowing downwards, the peristaltic movements of gullet, stomach, and intestines are effected for the most part by reflex movements, in that the stimulus of the food at each spot gives occasion to further progress through appropriate movements. In the same way the increase of the secretions of saliva, gastric juice, chyme, &c., occurring on the stimulus of food, is reflex action. The discharge of the mass of excretions likewise ensues through reflex action. We have seen above that reflex action is by no means mechanical, but an effect of the unconscious intelligence.

We come now to the most important parallelism, that with the recuperative power of Nature. As we shall see in Chap. ix. C., propagation is only a modified species of plastic energy, a creation of such fresh formations as, on arriving at maturity, reproduce the types of the parental organism (no matter whether a distinct separation of the sexes take place or not). But now, since, as will be shown in Chap. vi. C., the conception of the organic individual is a very relative one, as in certain circumstances it is hardly to be determined whether the new product represents the type of the entire individual or only of a part, there is manifestly no natural break between the new formation of certain organs in one individual and the self-multiplication of a complex organism embracing several individuals of a lower order, which unfolds a many-membered individual from a single germ.

Another parallelism between propagation and the *vis medicatrix* consists in this, that unusual fertility of an unprotected species frequently serves as a means of main-

taining in the face of pursuers an existence which without this would be imperilled. The question is here then to a certain extent concerning a more intense application of the natural sanative force of the species as a collective whole, which provides for the sufficient reparation of an unusually severe loss by over-abundant propagation, *i.e.*, formation of fresh individuals. This law is even discernible in the case of mankind, since after depopulating wars or epidemics there is perceived an increase of the percentage of births beyond the average. (Unfortunately the converse does not hold good with over-population, for then only increased mortality acts as regulator.)

We have already considered how the maintenance of a constant temperature is one of the most wonderful achievements of the organism, which can only be brought about by a marvellously accurate regulation of respiration, of egestion and ingestion. The future, however, must here be taken into account, namely, whenever future disturbances can be predicted through the occurrence of their causes. In conformity with this, we very soon see a correspondingly increased egestion follow every ingestion, before the blood can have received the new materials (*e.g.*, immediately after drinking increased micturition or perspiration, increased salivary and bilious secretion on eating, independently of local stimulation of the organs). Since at every moment there takes place an alteration of the quantity of heat, however slight, the *vis medicatrix* or plastic energy must continually be occupied even with this point alone. Further, there belongs to the digestion of all food a special kind of mechanical and chemical manipulation. We see that flesh cannot at all, or only imperfectly, be digested by herbivores, or plants by carnivores; that bones can be digested by birds of prey, but not by crows; that instinct assigns a single kind of food to many animals, without which they perish; and that conversely among men and animals idiosyncrasies of the race, or of the individual, are

found, owing to which certain materials remain unassimilated, and act injuriously on the organism. It follows from this that the digestion of every substance requires other conditions, and that it remains undigested or is injurious, if the organism is not in a position to establish these conditions. Accordingly, every act of digestion presupposes the inducing of particular conditions, without which it deranges the organism; here then we have again a continual occupation of the *vis medicatrix* in warding off disturbances, or, if it be preferred, of the formative activity in the assimilation of material.

We have seen that in every injury the operation of the *vis medicatrix* or regeneration is only possible through re-formation, by the instrumentality of inflammation, which furnishes neoplasm, whence the parts to be replaced are developed. Just as much does every increase of one egestion upon the suppression of another depend on a new formation, namely, the now increased secretion of egestion.

The whole nutrition of the body, in which, after completed growth, the main function of the formative impulse consists, is one and the same with new formation, and is related to the renewal of all the parts of the body, as the continuous peelings of the skin in man to the periodical sloughing of snakes and lizards, *i.e.*, nutrition is a sum of infinitely numerous, infinitely little, new formations; new formation merely nutrition rapidly gaining ground, and therefore more obtrusive. Having thus already recognised the re-formation in regeneration as a purposed effect of the unconscious soul, the like must hold good of nutrition, if we are obliged to recognise this too, as we cannot help doing, to be in conformity with a purpose. Certainly the psychical influence is less claimed in the gradual process of nutrition than in rapid new formations, because catalytic action is more serviceable; but that it can by no means be dispensed with is proved by the considerable disturbances of nutrition in the parts whose nervous connections with the centres of the ingoing sympathetic

fibres have been cut (partly emaciation, partly deterioration of the secretions, partly decomposition of the blood, in the more sensitive parts, as the eyes: inflammation and destruction). The capillary blood-vessels, from which by endosmosis the structures derive their nutritive fluid, may be ever so finely distributed, yet for every vessel there remains a relatively large area, in which the parts lying farthest from the vessel will also have to be cared for, also muscles, sinews, bones, and nerve-substance must frequently be equally provided for by the same vessel; every particle must thus extract from the nutritive fluid that which suits it. But now if we know that, according to chemical laws, both the structures to be nourished as well as the nutritive fluid have constantly a tendency to decomposition, which they obey as soon as, through death, or even before, after great bodily weakness, the power of the unconscious soul over it has ceased, we cannot possibly believe that this assimilation in all its fine local gradations, such as is necessary for the continuance of the organism, can go on without any psychical influence. This chemical stability of the organic tissues is quite analogous to the constant mechanical tension in tonus; both are only explicable by an infinite summation of small impulses antagonistic to natural decomposition and natural relaxation, and these impulses can only issue from the will. There thus follows from *a priori* considerations what is confirmed by empirical observation on division of nerves.

But now suppose these two reasons, together with the *identity* of renovation and nutrition, were not found sufficiently to the point to prove the psychical influence in ordinary nutrition, and one assumed that the catalytic action of the existing tissues were a sufficient cause, still the question would arise, Whence comes this constitution of the cause? Then one would be obliged to say, These structures have now this constitution because they formerly had it. Thus, with further questioning, a point would

be arrived at when the nature of the tissues would have become different, and this change would first have to be explained; for this change is the reason why the structures were from that moment adapted to a purpose, and so remained in virtue of their constitution; and since no materialistic explanation exists for this adaptation, it must be ascribed to the purposive activity of unconscious will. But then this also becomes the cause of the maintenance of the adjustment, and the necessity of having recourse to a psychical influence is not removed, but only postponed. Setting aside that at *every moment* of life we stand at such a point of change, we might go back still farther, for the present constitution of the tissues is not conditioned merely by the change itself, but also by their constitution *before* the change. If we regressively follow this series, we arrive at the first origin of the structure, which requires an explanation, whilst in the course of development we must intercalate at least as many psychical influences as there have been fresh adjustments. Now, as no structure of the organism is superfluous, but each has a definite purpose, which again serves as means to the preservation of the individual or the race, one will also see at this very commencement a purposive action of the will. And, as certainly as the first origin and the more considerable changes are important aids to the persistence and the nutrition of a structure, and facilitate the work of the will—nay, first makes it possible for the whole extent of the organism—so certainly are they not the sole conditions of nutrition, but the omnipresent unconscious will in the organism, together with the unconscious intelligence, is concerned in the smallest chemical or physical process simply because this organism is threatened in the smallest untoward event, if only by the tendency to chemical decomposition, and because in presence of these ceaseless material disturbances nothing else can maintain the equilibrium but a psychical influence. On the other hand, however, life is only possible when this psychical influence

is reduced, for the ordinary processes, to a *minimum*, and the rest of the work is performed by means of appropriate *mechanisms*. These appropriate mechanisms we meet with everywhere in the body, but so contrived that the unconscious will reserves to itself at every moment the modification of the purpose (*e.g.*, in different stages of development), as well as the independent interference with the wheels of the machine, and the immediate execution of a task to which the mechanism is unequal. This cannot diminish, but only increase, our astonishment at the unconscious intelligence; for how much higher does not the being stand, which *spares* itself the recurring performance of a work by constructing an efficient machine, than one who is always doing the same thing over and over again with his own hands? And in the last resort there always remains to the soul that unavoidable minimum of immediate work, because each moment brings other relations and other disturbances, and no mechanism can be adapted for more than *one* fixed class of relations. This, then, is the answer to all objections which might possibly have been urged in the course of this investigation so far, with the notorious appeal to purposive *mechanisms*:—(1.) The concept "mechanism" does not exhaust the facts, but the performances of a mechanism, when it exists, always leave a *something over to be immediately performed by psychical action;* and (2.) the fitness of the mechanism includes the *fitness of its origin*, and this again always remains the work of the soul.

If, with the consideration that every organic event has two causes, a psychical and a material, we recede farther in the chain of material causes, we arrive in all strictness, whatever point of departure we may choose, at the first fertilised ovum as the final material cause. When the development of the ovum, wholly or partially, takes place within the maternal organism, the material influences of the latter also certainly co-operate; but in the ova of fish and amphibia, which are fertilised outside the female body,

this is never the case. In this regress it is, however, to be remarked, that the psychical causes become in general so much the more important than the material the younger is the individual (as we saw in the strength of the *vis medicatrix*). At a more advanced age the organism for the most part lives on the acquisitions of better times; before puberty, on the other hand, it is ceaselessly occupied either with processes of simple growth or with producing new structures, and in the life of the embryo the importance of the psychical influences increases the earlier the period to which we recede.

The just-fertilised ovum is a cell (consisting only of the yolk), the wall of which is represented by the vitelline membrane, the contents by the yolk, and its nucleus by the germinal vesicle. Among the higher animals the blastodermic vesicle within the germinal membrane (in man about one two-hundredth of a line) is the part from which alone the embryo, certainly with the assistance of the yolk, is developed. Every part of the egg exhibits a thoroughly uniform structure (partly granular with imbedded droplets of fat, partly membranous and mucous), and these homogeneous elements suffice to produce, under generally similar external circumstances (brood-heat in birds, temperature of air and water with fishes and amphibia), the most diverse races with their finest differences and their immense multitude of systems, organs, and tissues; for among the higher animals, the young, on emerging from the egg, contain almost all the tissues and differentiations of the adult animal. Here the influence of the will is most clearly manifested in the transformation of the elements, as one may see in the ova of fish a few hours after (artificial) fertilisation the meridional and equatorial furrowings of the whole yolk, with which the development commences, and which is followed by a number of parallel interlacings. During the greater part of the embryonic life the soul is occupied with the establishment of mechanisms which

are destined later on to save in great measure the labour of moulding the material. We can see no reason, however, why we should not ascribe the new formations which here make their appearance, just as much as the new formations of after-life, to the purposive activity of the unconscious will; for the greater extent of these first formations, in comparison with the already existing body, can in truth establish no qualitative distinction, and that the moment of the individualisation of the new mind, *if* such a one may be assumed at all, is that of fertilisation, can certainly not be involved in doubt. That, however, the mind in that period affords no indication of consciousness can neither excite astonishment, since it has first to form the organ of consciousness, nor can it be anything but helpful to its concentration on the unconscious performances, since, indeed, even in after-life, the power of the Unconscious is most forcibly displayed when consciousness is entirely suppressed, as in remedial crises during deep sleep; and the embryo, indeed, lies too in deep sleep.

If we, however, once more consider the question whether in general an unconscious will can produce bodily effects, we have in preceding chapters arrived at the conclusion that every action of the mind on the body, without exception, is only possible by means of an unconscious will; that such an unconscious will can be called forth partly by means of a conscious will, partly, also, through the conscious idea of the effect *without* conscious will, even in *opposition* to the conscious will. Why should it not, then, also be called forth through the unconscious idea of the effect with which here, even to demonstration, the unconscious will of the effect is bound up, because the effect is end? But, lastly, that the mind, in the first period of embryonic life, must work without nerves, can certainly not militate against our view, since, indeed, not only in nerveless animals do we see all psychical effects follow without nerves, but even in the case of

man have cited above sufficient examples of the kind, and, moreover, the embryo in the first period has just that semifluid structure of highly organised matter, which forms an excellent substitute for nerve-tissue proper.

If now, in the first place, we perceive materialistic attempts at explanation to be insufficient; if, in the second place, a predestined fitness of development appears impossible, considering that any set of circumstances occurs only once in a lifetime, and yet each set of circumstances requires a novel reaction, and calls forth just that which is demanded; if, thirdly, the only remaining mode of explanation, that this unconscious psychical activity itself appropriately forms and maintains its body, has not only nothing to be said against it, but has all possible analogies from the most different departments of physiology and of animal life in its favour, the verification of individual providence and plastic energy appears to be as scientifically certain as is possible in inferences from effect to cause. (Comp. further, Ges. philos. Abhandlungen, No. vi., "Ueber die Lebenskraft.")

I close then this section with the fine words of Schopenhauer: "Thus even empirically every being stands before itself as its own handiwork; but the language of Nature is not understood, because it is too simple."

B.

THE UNCONSCIOUS IN THE HUMAN MIND.

"The key to the knowledge of the essence of the conscious life of the soul is to be found in the region of Unconsciousness."—C. G. CARUS.

I.

INSTINCT IN THE HUMAN MIND.

IMPOSSIBLE as it is to draw a strict line of demarcation between body and mind, no less impossible is it to discuss apart the instincts relating to our physical and to our psychical needs. Thus we have already in the preceding section alluded to several instincts of the human mind, as the capricious appetites of the sick or the pregnant, and the curative instincts of children or somnambules. A few others border on the bodily instincts, *e.g.*, the fear of falling on the part of young animals and children, who, *e.g.*, are quiet when carried upstairs, but become restless when carried downstairs; the greater caution and circumspection of the movements of pregnant horses and women; the instinct of mothers to place the new-born at the breast, of children to suck; the peculiar talent of children to distinguish genuine from feigned friendship; the instinctive shyness in the presence of certain strangers which is wont to be manifested especially by pure, inexperienced girls; the good and bad presentiments, with their great motive power to commit and omit actions, especially in the female sex, &c.—We shall consider in the present chapter those human instincts which are more connected with the bodily life, and to which, therefore, the name instinct is willingly accorded, whereas an empty sentiment of human dignity dictates the refusal of the term to all manifestations of the unconscious more remote from the bodily life, but otherwise perfectly analogous, on account of its animal associations.

In the first place, we have to consider some instincts of aversion, *i.e.*, such as do not compel to actions, but to omissions, or merely to those actions whereby the object of aversion is got rid of or avoided. The most important is the fear of death; this is only a particular form of the instinct of self-preservation, other forms of which we already know as the *vis medicatrix*, plastic energy, migratory impulse, reflex protective movements, &c. It is not the fear of the last judgment or other metaphysical hypotheses, not Hamlet's doubt of what will come hereafter, not Egmont's simple delight in being and doing, which restrains the hand of the suicide, but instinct does it with its mysterious shudder, with its wild heart-beats chasing the blood madly through the veins.

A second instinct of repulsion is Shame; it has such exclusive reference to the generative region that these bodily parts are even named after it. It appertains in an especial degree to the female sex, and excites in them a characteristic defensive attitude, and is determinative of the whole life of man, of savage and civilised alike. The milder form of heat due to non-periodicity [1] and shame are the two foundations which allow of the elevation of the sexual relations of man into a higher sphere than that of the animals. Shame is something so little due to consciousness that we already find it among savage tribes; certainly in their case limited to the main point, whereas civilisation draws within its sphere whatever has any sort of connection with sexual relations.

An analogous instinct of aversion is Disgust. It relates to food as shame to sex, and serves to put us on our guard against those food-ingredients which are easily mixed with dirt and impurity, *i.e.*, organic excretions and organic matter in a state of semi-decomposition. Its senses are

[1] Beaumarchais rated this factor so highly that he jestingly said: *Boir sans soif, et faire l'amour en tout temps, c'est ce qui distingue l'homme de la bête.* A much better statement of specific difference, at all events, than "thought;" for the rest, not quite true, since the anthropoid apes have the non-periodicity of heat in common with man.

taste and smell, and it is scarcely correct when Lessing regards it as possible for other senses. At the same time it is of course not necessary that the idea of eating the things for which one feels disgust should have been already entertained; one is often previously so disgusted as to prevent the thought of eating arising. There is, moreover, another much deeper disgust which has reference to purity of the skin, in order that perspiration may not be suppressed through the stopping-up of the pores. Here, at any rate, the sense of sight may be directly concerned.—Man can by habit more or less repress these, as all other instincts, just because with him consciousness has become a power which, in most things, except those of supreme importance, is able to oppose the Unconscious, and habitual action truly belongs indeed also to the sphere of consciousness. But the Unconscious can also be repressed when that which would have been done instinctively without consciousness and habit is done with consciousness and from habit; then the repugnance which one feels towards the contrary is rather a repugnance to the unusual than an instinctive repulsion.

Look at a young girl and boy: the one neat and smart, elegant and mannerly, graceful as a kitten; the other with trousers torn in a recent shindy, awkward and clumsy as a young bear. She is fond of dress and of showing herself off, tenderly dandles her doll, and plays at cooking and washing and ironing; while he builds a house in the corner, plays robber and soldier, rides on every staff, sees a sabre or a gun in every stick, and is especially pleased with the manifestation of his own energy, which of course consists, for the most part, in useless destruction. What a delightful anticipation of the future vocation, which is often to be observed in the most charming details! If much of it is imitation of adults, still a presaging instinct is unmistakable, which guides children, even in their sports, to the exercises which they will require in the future, and makes them capable

and trains them in advance, just as among young animals we see the sportive instinct always leading them to activities which they will require hereafter in their independent life (think of the kitten and the reel). In the play-instinct the will often procures itself resistances which it has to overcome. This paradox is likewise only comprehensible if the play-impulse is instinctive, and unconsciously subservient to the aims of the future life. If the play-impulse were only imitative, boys and girls would imitate the same things, since they do not understand the distinction of sex, and in strictness do not even possess it. How unique is the rage for dancing, the whimsicalness, love of dress, grace, one might almost say childish coquetry, in little girls, which points to their future destiny of conquering men, all of which is utterly foreign to boys with healthy minds! How characteristic is the indefatigable assiduity with which they tend, dress, and dandle their dolls; how in harmony is it with the tenderness with which grown-up girls kiss and caress all strange children in arms, which young men commonly find more repulsive than young monkeys!

How deeply such instincts as purity, love of dress, modesty are rooted in the Unconscious may be particularly observed in the blind who are at the same time deaf and dumb. Let any one who has never reflected on this condition try to form a clear idea of it, and of the poverty of the means of communication with the outer world which are at the command of such an unfortunate. Laura Bridgman, in the Blind Institution at Boston, who in her second year had lost all her senses save touch, was clean and orderly and very fond of dress. If she had on a new article of clothing, she wished to go out to be seen and observed. She was often in raptures over the bracelets, brooches, and other ornaments of the ladies who visited her. Julia Brace (who had become blind and deaf in her fifth year) was just the same. She examined the style of hair of the ladies who paid her visits, in order

that she might imitate it. The same passion for dress was found in all other similarly unfortunate girls, so that it became a chief means of reward and punishment. Lucy Reed always wore a silk kerchief over her face, probably because she thought her face was disfigured, and when she entered an institution, was only with the greatest trouble dissuaded from wearing it. She recoiled from the touch of a person of the male sex, and would not permit caresses of any kind from the same, although she gladly received and responded to those of women, even when strangers. Laura Bridgman showed in this respect a still greater delicacy of feeling, without any one being able to guess how she attained to a notion of sexual relations, since usually no man ever approached her except the director of the institution, Dr. Howe. She had heard much of Oliver Caswell, likewise blind, deaf, and dumb, as his arrival in the institution was expected, and was very curious about her companion in suffering. When he arrived, she kissed him; but then flew back like lightning, as if terrified at having done something improper. She repaired the smallest disorder in her dress, like a girl very strictly educated in rules of decorum. Nay, she even transferred her modesty to lifeless objects. Thus, *e.g.*, when one day she wanted to put her doll to bed, she previously went about the room to discover if any one was present; and when she found Dr. Howe, she turned back laughing, and only after he had departed did she undress her doll, without being shy before her instructress.—To teach a blind, deaf, and dumb child the laws and conceptions of decency would be almost impossible if instinct did not correctly point them out, and opportunity alone or the slightest hint did not suffice for the realisation in conduct of this immediate unconscious intuition. That this feeling of modesty really arises from the depths of the psychical nature, is proved by the concurrence of its higher development with the attainment of puberty. Thus, *e.g.*, in the case of a blind deaf mute in Rotherhithe

workhouse, who had previously lived a completely animal life, an entire change took place in her seventeenth year: she became all at once just as attentive to dress and decency as other girls of her age.

Sympathy or fellow-feeling is a reflex mental instinct. As feelings are divisible into pleasure and displeasure or into joy and sorrow, so fellow-feeling into sympathetic rejoicing and compassion. Jean Paul says, "For sympathy in sorrow a man is sufficient, but sympathy in joy requires an angel;" for the reason that sympathy in joy can only arise if it is not hindered by another feeling, envy. This is, however, the case more or less with all men, whereas compassion is less obstructed, since pleasure at the misfortune of others is usually very slight in most cases, if hate and vindictiveness do not give birth to it. Thus it comes to pass that sympathy in joy is almost insignificant, whilst compassion has the greatest importance. Now compassion arises by way of reflection through the sensuous perception of another's suffering. The convulsive motions and writhings of pain, the looks and gestures of grief and distress, the tears of sorrow, the groaning and moaning, the whimpering and rattling in the throat, are material signs which are immediately comprehensible to a being of like nature through an unconscious intelligence; they do not, however, act merely on the intellect, but also on the heart, and reflectorially call forth similar pains. Cheerfulness and sadness in a similar way infect other people like convulsions. When the sense-perception only apprehends the signs of pain in general, the compassion is only general, a shudder, or a quiet woe, or a thrilling horror, according to the intensity and duration of the observed pain; but if this is specially known, reflex action reveals the same kind of pain in the compassion, as soon as the latter has surmounted the lowest stage of general lamentation. That the degree of compassion is dependent on the momentary receptivity of the mind for reflex actions, and also on the degree of interest which is otherwise

entertained for the sufferer, is undoubted; it is, nevertheless, purely reflex action, as is strictly proved by this, that compassion is, *cæteris paribus*, in direct ratio to the clearness with which the senses perceive the signs of suffering. For example, when we read of a battle where ten thousand dead and wounded are counted on either side, we are scarcely at all affected, only when the dead and wounded are summoned before our imagination does our compassion stir; but when we ourselves go about among the pools of blood, the corpses and the limbs, and the groaning and dying men, then indeed a deep horror overcomes us. What value the instinct of compassion has for man, who only through mutual help truly becomes man, is tolerably plain. Fellow-feeling is the metaphysical bond which overleaps the limit of individuality on the side of feeling; it is the most significant impulse for the begetting of such actions as consciousness declares to be morally good or beautiful, more than merely dutiful. It mainly imparts reality to that province of ethics which is usually termed "the duties of affection," the reality from which the general notion is subsequently abstracted.

As sympathy is the chief instinct for the *production* of benevolent actions, whose effects extend beyond the sphere of egoism, so the instinct of Gratitude appears in the light of a *multiplier* of the same. Although gratitude sometimes leads us to injure a third person, yet the case is rare, and the expediency of this instinct upon the whole is not to be misapprehended if it be also supplemented, nay, even superseded, in a perfect system of ethics. As the impulse of retaliation in respect of benefits received becomes a multiplier of morally beautiful actions, so in respect of injuries does it become, in the character of the instinct of revenge, the original source of the sentiment of justice. For as long as the community has not taken upon itself to satisfy the passion of revenge, self-vindication is rightly looked upon as something holy, as a primitive institution of justice;

and this it is which must gradually form, enhance, and clarify the feeling of right, until such conception of right gains a solid foundation in the national habits, when the duty of requital may be transferred to the community at large. It is by no means intended by this to assert that sympathy and the retaliatory impulse are the moments from which ethics and jurisprudence must be theoretically derived and established, which, on the contrary, I should not grant; it is only asserted that they are in fact practically the roots from which those feelings and actions have sprung, whence mankind have gained, through abstraction, the conceptions of the morally beautiful and of law.

The next human instinct of importance is Maternal Love. For the sake of comparison, let us glance back once more at the animal kingdom.—Most of the lower animals have no need to trouble themselves about their young ones, because these emerge from the ovum sufficiently developed; or because, by means of the various instincts which have been already mentioned, they have, directly or indirectly, brought their eggs to those places where the creatures when hatched find the conditions of their further development until the age of independence, or are still provided by the mother with additional means of subsistence. The place which yields the necessary conditions of development is with the wolf-spider a spun egg-bag, which it fastens to itself by means of a web; for the Monoculus, a part of the oviduct turned inside out, which protrudes as ovisac; with birds, the nest, together with the brood-heat of the maternal body; in some fishes and amphibia, the body of the female itself, just as in all mammals, but with this great difference, that in the latter an organic connection of mother and fœtus persists till the time of birth (the marsupial mammals excepted). It is evident that here again the same thing is achieved in one case by instinct and maternal foresight as is effected in another case by organic formative activity, *i.e.*, the

instinctive maternal care for the development of the young till independence is only in form, not in essence, different from the procreation and formation of the fœtus.

Two pervading laws here display themselves; the first is, that the maternal instinct cares for the young animal as long as it is unable to care for itself; the second, that this time of nonage or childhood in general lasts the longer the higher the class stands in the animal scale. This difference is, on the one hand, based on the simpler conditions of the nutrition of the lower animals (especially aquatic animals); on the other hand, on the metamorphoses when the earliest life-period is passed in quite another form and under other nutritive conditions (mostly in the form of a lower stage). There is still, however, undoubtedly an unexplained remainder, which is especially evident if we confine our attention to the mammalia, and compare, *e.g.*, the duration of the infancy of a rabbit, a cat, and a horse. From these first two laws the following conclusion may be drawn: The instinct of maternal love gains in general greater significance and range the higher we ascend in the animal scale, a scale graduated, however, not zoologically but psychologically.

While we see the majority of fishes and amphibia persist in dead indifference to their young, some insects exhibit a higher maternal love in conformity with their higher mental activity. Only see how tenderly ants and bees nourish, feed, and protect their eggs, nay, even their still imperfectly developed larvæ; how some spiders carry their young about and carefully feed them (as the hen her chickens). Among birds, the maternal care attains a high degree; certain classes of birds, *e.g.*, some birds of prey and birds of song, decidedly surpassing in mind the general run of mammals. The self-sacrificing courage with which even the smallest birds defend their young against every enemy; the self-renunciation with which they bring them food whilst they themselves often starve and grow lean; the readiness to sacrifice themselves with

which they bare their breast and body of feathers to make a warm couch for their naked little ones; the patience with which they afterwards instruct them in flying, in catching insects, and other dexterities which they need for independent life; the impatience to see the young just as clever as themselves,—all these are the clearest proofs of a deeply rooted impulse; whilst the complete extinction of this tender fondness when the young become independent, nay, the conversion of the same into hostility, shows that not custom or conscious choice, but an unconscious necessity is the source of this impulse.

The point of instruction in particular has been hitherto far too much overlooked, for the animals which stand mentally higher learn, in fact, much more through the instruction of their parents than one thinks, *since Nature never makes use of double means to an end, and refuses instinct where it has granted the means for conscious performance or acquisition.* Penguins entice their young, when they will not follow them into the water, to a rocky prominence, and then push them down. Eagles and falcons guide their offspring to higher and higher flights, to flight in circles and to evolutions, as well as to swoop down on their prey, for the latter purpose flying over them and dropping dead, ofttimes even small living animals, which the young ones are only allowed to devour if they have themselves caught them. But as surely as the *method* of this instruction is a conscious mental product of these animals, so surely is the impulse to *instruct* their young *in the main instinct.*—As in higher mammals infancy lasts longer, so not merely is the care of the mother, but also her instruction more comprehensive. Let any one observe how a cat educates its young ones, flattering and rewarding, putting them right and punishing, whether it is not the faithful image of human education by uncultivated mothers; a parallel confirmed even in the slightest traits, *e.g.*, in the enjoyment which the mother visibly exhibits in the amusingly knowing consciousness of her superiority.

We partially see already in birds a chemical preparation of the food in the maternal crop. This instinct is fully developed in the case of the mammal, whose lacteal glands begin their secretion long before birth, a secretion which is increased by the sight of the young, diminished by their absence. That which among birds is perceivable only in a very rudimentary form, but among mammals is exhibited in the inheritance of special maternal qualities or peculiarities of character, in the fright of the pregnant and their capricious appetites, to wit, the immediate unconscious reciprocity between the soul of the mother and the child, the possession of the infant's soul by the mother, this appears continued in a modified way after birth, and only gradually disappears. Thus the peculiar phenomenon of contagious visions nowhere occurs more easily than between the mother and her nursling, and both when pregnant and even after delivery, mothers, whose nature has not been spoilt by culture, possess a marvellous divination of their children's needs. Just as the wasp, which opens the hole to convey new food to its larvæ when the original stock has been consumed, so the mother guesses when her child requires food, and awakes when the child is in want, whereas no noise can disturb the sleep of fatigue. But, as said before, this direct communication between the mind of mother and of child pretty quickly disappears; only sometimes under extraordinary circumstances, *e.g.*, in dangerous illnesses of the child, may it be seen to revive.

The question now is, whether in mankind maternal love is really anything different from what it is among the brutes; whether anything else but instinct can bring it to pass that the most reasonable and most sedate women, who have already enjoyed the highest treasures of mental culture, are all at once prepared to undergo, with real, heartfelt joy, and for whole months, the sacrificing nurture, the peevishness and sordidness, the toyings and silliness, without any response whatever on the part of the

child, which, for the first months, is nothing more than a flesh doll, slavering and befouling its swaddling-clothes, which, at the most, turns its eyes by reflex action to the light and instinctively stretches out its arms towards its parent. Only see how such a rational woman is completely lost in admiration of *her* child, which is only with the greatest difficulty to be distinguished from any other; and how she who, in former days, had made clever criticisms on Sophocles and Shakespeare, now will be beside herself with joy because the little one so soon croaks A. And with all this the woman does not, as the man might, undergo all these inconveniences in hope of what the child may hereafter become, but she is simply absorbed in the present joy and maternal delight. If that is not instinct, then I don't know what instinct is. Let any one ask himself whether a poor nursery-maid would endure all that drudgery and fatigue for the sake of a daily wage of a couple of pence if her instinct did not already point to this occupation.

That the maternal care lasts so long in the case of the human child, is merely a special case of the above-mentioned law, and lies in this, that children of four years old would sooner be run over in the street than get out of the way, whilst a young cat gets out of the way as soon as it can see. What is more natural than that the protecting instinct of the mother should serve as a providence to the child, and that the little one should instinctively cling to its mother's gown? All animals feed, nurse, and look after their young until they can feed themselves, and is it likely man, with his lesser fertility, should make an exception to this general law? And when can a child maintain itself? Certainly not until puberty. Accordingly, the instinctive parental care must at least last till then. Animals teach their young the dexterities which they need in order to earn their living, and should not man do the same? Among animals, too, the *kind* of instruction is partly the result of conscious thought, but the instruc-

tion itself is natural impulse; and can it be otherwise among men, because the skill and knowledge which man needs for earning a maintenance are somewhat greater than among animals? But it is indeed agreed that in the whole animal kingdom no such psychological leap takes place as from the highest animal to the moderately civilised man, consequently the things which man must acquire, in proportion to what he can instinctively do, are more considerable than among the highest animals, because his conscious mind is just adapted for these performances, and, accordingly, an instinct for them would be a *superfluity*. Nature, however, does nothing in vain. Doubtless, however, the didactic instinct is necessity in the parents, because without instruction the young would perish before acquiring their powers, and the human race owes to this higher faculty of learning and this stronger didactic instinct, in union with a more perfect language, its capability of progressing indefinitely, and to this its whole position and significance in Nature.

Among animals, male and female have the same employments. It is otherwise with the civilised human being, where the man in particular has to earn for the family, and is pre-eminently fitted for the education especially of the male posterity. Only here and there among animals does the male sex participate in caring for posterity. Thus the male salmon makes a furrow for the eggs of the female, which it fills up when they are fertilised. With most monogamous birds, the male helps in building the nest, alternately broods or feeds the brooding female, defends the eggs, and takes part in the nurture, nourishment, and protection of the young. The like also takes place in the case of man. It is a common phenomenon that all little children are extremely repugnant to men, and this aversion ceases at once if they themselves have any. It scarcely admits of doubt that there is an instinct of paternal affection, if feeble, which is also proved by the tender love of fathers to those children who,

in consequence of their miserable bodily and mental condition, would under other circumstances have only excited aversion and contempt, or at the most pity. But, nevertheless, I believe that, in paternal love, partly duty, decency, and good breeding, partly habit, partly conscious friendly inclination, furnish the main motives, and that instinct, on the one hand, only manifests itself in early youth, on the other, in moments of danger to the child. Lastly, it should be observed that a true paternal love—I mean one which exceeds what decency and good-breeding demands, and which the custom of the environment permits to grow—is a much rarer phenomenon than one is inclined to assume, though certainly not so rare, by a long way, as the reputed love of brothers and sisters. What, however, really exists of such father's love, which does not simply show itself in moments of danger, but is always there, is conscious friendship, united with the conscious reflection that no one will care for his child if he does not, for the child for whose existence he is responsible—a reflection which alone can give strength for the greatest sacrifices. From all this it is explicable that human children, even after their education has ended, will not be so strange to their parents as the young of animals, for through the so much more prolonged infancy custom has time to forge its chains, and if there be any spiritual harmony between parents and children, a certain degree of friendship will arise with the aid of habit. But lastly, the instinct of parental love is never entirely extinguished in the case of mankind, because the parents, as long as they live, always have either the possibility of making sacrifices for the welfare of their children or of helping them out of danger; for whilst the brute has entirely to rely upon itself, man is only in a position to live humanly in society. To which must be added, in conclusion, that men in advanced age repeat the comedy in the case of their grandchildren, which is not the case with animals.

If in the man paternal love is less of an instinct, so much the more is the impulse to establish a household, and to fulfil his destiny as father of a family, although he thereby ruins and makes unhappy himself and the girl whom he marries, whilst unmarried they might both have had enough whereon to live comfortably. I do not speak here of love, nor of the sexual impulse in general; but where the former is entirely wanting, and the latter would be far from affording any sufficient motive, the impulse springs up in the mature years of a man's life to set up a household; and however clearly the poor devil may see that he will have to starve in consequence, whilst as single he has a fair competency, still the marriage comes off. It is the same impulse which bids the young four or five year old stallion part from the family of his parents, along with some of his sisters, to form a family of his own, and which compels the bird to build its nest. They know as little as that poor wretch, that the pains and deprivations which are instinctively imposed upon them have no other purpose than to make possible the maintenance of the race. It is this unsatisfied impulse which makes old bachelors feel so uncomfortable; and though they may see a hundred times that they would not be better off in the married state, all things considered, yet the pain of this unsatisfied instinct is not to be reasoned away, just because it is instinct.

The consideration of the instinct of love should now follow. This point is, however, so important, that I shall give it a chapter to itself.

II.

THE UNCONSCIOUS IN SEXUAL LOVE.

THE stamens of plants incline when their pollen is ripe, and shed it on the stigma. Fishes pour their spawn on the eggs of their own species when they find them in great numbers; the salmon, moreover, makes a furrow for its female. The male cuttlefish, on coming in contact with their females, throw off an arm elaborated into a generative organ, which, penetrating the latter, performs the reproductive act. In November, river crawfish fasten under the belly of the females pouches filled with seed, which in the spring fertilises the mature eggs. The male spiders take up the seminal fluid, which trickles from their sexual organs, with an extremely complicated apparatus contained in the last hollow joint of their tentacles, and by help of the same apply it to the aperture of the female. The male embraces the female frog and discharges its sperm, whilst the female simultaneously deposits the ova. The singing-bird applies the opening of its spermatic duct to the female anus, and animals possessed of a penis introduce the same into the female vagina. When fishes pour the spawn, which they feel impelled to discharge, only on the eggs of their own kind, when species of animals in which male and female are of very different forms (as, *e.g.*, glow-worms) still find each other without fail in order to copulate, and when the male mammal, in obedience to an irresistible impulse, always introduces its penis into the female vagina of *its own* species, are we to suppose that there are really two different

causes at work, or is it not rather the working of the same Unconscious, which, on the one hand, *harmoniously fashions* the sexual parts, and, on the other, as instinct impels to their *right* use—the same unconscious clairvoyance which in creation, as in use, adapts the means to an end, which does not appear in consciousness?

Would man, at whose command are so many means for satisfying the physical impulse, all equally efficacious with coitus, be likely to discharge the inconvenient, disgusting, shameless, reproductive function, did not an instinct always urge him anew, often as he has experienced that this mode of satisfaction yields him, in fact, no higher sensuous enjoyment than any other? But many do not attain even to this much insight, because, *in spite of* experience, they always measure future enjoyment according to the strength of the *impulse*, or are so possessed by the impulse during the act, that they *never attain the experience*. It might, perhaps, be replied, that man frequently desires intercourse although he is aware of the impossibility of procreation, *e.g.*, with the notoriously infertile or prostitutes, or when, as in illicit connections, he seeks to prevent procreation; but to such we reply that the knowledge or intention of consciousness has no direct influence on the instinct, since the design of procreation lies *outside* consciousness, and only the willing of the *means* to the unconscious end (as in all instincts) appears in consciousness. That the impulse to sexual union is an instinct which manifests itself spontaneously, and is by no means to be regarded as a consequence of the experience that a pleasure is to be expected from this union, appears from the fact that the sexual impulse as instinct is universal in the animal and vegetable kingdom, whereas venereal organs, which link a sexual pleasure to the act of copulation, are only to be found at a tolerably advanced stage of the animal kingdom. The instinct of sexual intercourse is then something far earlier and more original in the history of organisation, since all organisms destitute

of venereal organs are sufficiently impelled by it alone, without the aid of sensibility. It is, however, tolerably plain why the Unconscious deems special venereal organs necessary in the case of beings whose consciousness is far more highly developed; for the more consciousness attains independent importance, the greater is the risk of its thwarting the demands of instinct, the more desirable does a bait become to entice to the performance of instinctive actions. A proof that the reproductive instinct is no mere result of physical craving in the generative organs may be found in the above-mentioned example of the treading of birds (Chap. iii. A. p. 82), and finally in the phenomenon that the strength of the sexual and physical urgency are to a certain degree independent of one another. For one finds human beings with a strong inclination to the other sex, whilst their physical impulse is so small that it almost borders on impotence; and conversely there are persons of strong physical impulse, and yet with little affection for the other sex. This is due to the fact that the physical impulse is dependent on the *accidental* physical organisation of the generative organs, but the metaphysical impulse is an instinct which wells up from the Unconscious. That does not, however, preclude, on the one hand, the metaphysical impulse from being more vehemently aroused by a stronger physical impulse, and, on the other hand, the strength of the physical impulse while the organism is being fashioned being conditioned by the strength of the metaphysical impulse. Accordingly the independence only obtains within certain limits. Phrenology also recognises the distinctness of the two impulses, for whilst the physical craving can manifestly only be sought for in the organisation of the generative organs and the irritability of the whole nervous system, phrenology—with what right is of no consequence — seeks to localise the sexual impulses in the cerebellum and circumjacent parts.

Having perceived the sexual impulse in general to be of the nature of instinct, the next question is, Whether the like is true of the *individualisation* of the same, or whether this springs from the conditions of consciousness? Among animals we distinguish the following cases:—Either the sexual impulse is merely general, the selection of the individual is entirely left to chance, and all intercourse ceases with coition, as, *e.g.*, among the lower marine animals, the fishes which copulate, frogs, &c.; or the pairs remain together for the time of one rut, as most rodents and several of the cat tribe; or till the period of delivery, as bears; or for some time after, till the young are more developed, as most birds, bats, wolves, badgers, weasels, moles, beavers, hares; or they remain together for life and form a family. Here, again, we meet with polygamy and monogamy. The former is found among the gallinaceous birds, the ruminants, the solipeds, pachyderms, and seals; the latter among a few crustacea, sepiæ, pigeons, and parrots, among eagles, storks, deer, and Cetacea. We may reasonably assume that among monogamous animals the conclusion of marriages, which are so faithfully kept, is not mere result of chance; but that the motives of such preference must be looked for in the nature of the couples themselves. Do we not often see, even in animals of a higher mental grade, which couple irregularly, a sexual selection accompanied by decided passion (*e.g.*, in noble stallions and dogs)? A widowed eagle usually continues unmarried for the rest of her life. It was observed that a stork sought its female, which it could not take with it on account of a wound, every spring for three years, but in the following years remained with her even during the winter. In monogamic animals sometimes the one cannot live without the other; thus, *e.g.*, of a pair of inseparables, the second often dies a few hours after the first. The like has sometimes been observed of the Kamichi, a South American marsh-bird, as well as of turtledoves and Mirikina apes.

Woodlarks can only be kept in a cage in pairs. We cannot suppose that that which has overcome the powerful migratory instinct in the stork, which kills inseparables in a short space of time, is anything else than instinct; otherwise it could not so speedily and so profoundly affect the being's core. That the various forms of the sexual relations are instincts is also proved by their unchangeableness within the limits of the species. According to the analogy of these phenomena, we must even in the case of man regard the cohabitation of spouses in marriage as an institution of instinct and not of deliberate consciousness, as also the tendency to found a family, which is closely connected therewith. The intentional pursuit of illicit *transitory* love we must, on the other hand, regard as something contrary to instinct, which is only called forth by *conscious egoism.* Here, however, I do not understand by marriage the ecclesiastical or civil ceremony, but the *intention* to make the relation a *lasting* one.

The question arises, Whether polygamy or monogamy is the form natural to man, and how it happens that the human is the only animal species where different forms of sexual relations are to be found co-existing? This enigma seems to me resolvable in this way: that the instinct of the man demands polygamy, that of the woman monogamy; that therefore, wherever the man exclusively rules, polygamy exclusively prevails. On the other hand, wherever, owing to higher cultivation, man has accorded to woman a worthier place, monogamy has become the sole legally valid form; whilst, as a matter of fact, in no part of the world is it strictly kept on the part of men. That monogamy is the form which will, in fact, prevail among mankind for the longest period of its existence, is indicated by the equal number of the individuals of the two sexes. If adulterous longings are so hard for man to conquer, this is only an effect of his polygamous instinct; but when a woman, who has in her husband a whole husband, has adulterous desires, this is either

a consequence of thorough depravity or of passionate love. The difference of the instinct in man and woman may be easily comprehended, when one considers, that a man is physically competent to beget upwards of a hundred children in a single year, but the woman can only bear one child; that the man is able under favourable circumstances to maintain several women and their children, but the wife can only dwell in one man's household, and feels herself and her children injured by every rival introduced therein; lastly, that in case of adultery only the husband, not the wife, runs the risk of regarding the children of others as his own, and of having the love for his own children undermined through distrust of conjugal fidelity.

The sexual instinct in man having now been illustrated both in the case of the race and of the individual, there still remains the question, *why* it is concentrated exclusively on *this* individual and not on *that? i.e.*, the question of the determining grounds of this fastidious *sexual selection.*

That among human beings, especially the more educated classes, the number of desirable individuals of the other sex is essentially limited, lies in the hindrances which must first be overcome, namely, aversion on both sides, and modesty especially in the female sex. The corporeal contact is so close, and is so multiplied through the instinctive accompanying actions, as kissing, &c., that the loathing, if it is not already blunted, enters into its full right, and opposes a powerful resistance to sexual union with each and every individual. Shame in the female sex, and in the male the knowledge of the resistance which this shame will arouse in opposition, are almost still more effective limitations. Both, however, only negatively explain why this and that individual are excluded, and not positively why *this* one is desired. The sense of beauty may certainly also co-operate,—just as one prefers to ride a beautiful horse, even apart from its step,

and also when nobody sees it, than an ugly one, although it is by no means obvious what beauty or ugliness has to do with enjoyment in coition, or generally with the sexual relations; for if, as *e.g.*, in Shakespeare's "All's well that ends well," the wrong person is foisted upon a passionate lover in the darkness of the night, it manifestly does not detract from his enjoyment. Vanity also, to be able to call a pretty woman one's wife before others, might have something to say in the matter, although the subject of this vanity again requires explanation; at bottom we do not get a step nearer a solution, because, in the first place, there are many pretty people, and, secondly, the handsomest are by no means the most attractive sexually. A better answer would be: The man has to conquer feminine modesty in order to attain his end; if he has once begun this work, which is only gradually effected, he has with this particular individual a lighter task before him than with others, to secure a victory for his vanity. But although this may often enough be the state of the case, still this answer is by itself altogether insufficient, not only because it again leaves the first beginning entirely to chance, but also because, if this were the determining circumstance, the mistress already won would be preferred to all fresh conquests from simple convenience, which certainly is not true.—We must then before all things maintain, that the physical impulse as such, or as one says the *senses*, are by themselves thoroughly *incapable* of explaining the concentration of the impulse on a specific individual. The mere stimulus of sense never leads to love, but only to libertinage, preferentially to the unnatural, if it is only strong enough and is not restrained from such courses by other impulses. Even where sense holds to natural courses, and seeks to attain the heightening of enjoyment by external artifices, where, in the ominous unbelief in the *metaphysical* nature of love, it imagines itself able to snatch the charm of the latter by outward gratification, even there does it soon become

aware, with disgust, that mere *flesh* always turns to *carrion*, and, instead of love, it folds to its heart only its repulsive corpse. As certainly as a putative love without sense is only the fleshless and bloodless spectral fancy of the perverted soul, so certainly is mere sensuality only the soulless corpse of the foam-born goddess. The whole of the following proof rests on this foundation, that *sense* can only explain the snatching at *some* sort of sexual *enjoyment*, but never sexual *love*.

It would seem, then, that it must be mental qualities, which condition sexual selection. It is quite impossible directly to suppose this, since in respect of sexual enjoyment mental qualities are perfectly indifferent, still more indifferent than corporeal beauty. The statement could therefore be only understood to imply that mental qualities call forth a mental harmony and mutual attraction, which rest on conscious foundations, and promise the greatest possible happiness in future cohabitation. This conscious relation of souls, which is entirely identical with the notion of friendship, would then condition sexual selection, *i.e.*, be the cause why the sexual intercourse with the specially favoured individual is preferred to all others. This process is, in fact, a very common one, especially on the side of the female sex, which cannot choose, but is chosen. It is by no means usually to be expected that a bride should have any other love than this for a bridegroom whom her parents propose for her, or to whom she has for the first time spoken in private when he made his declaration, and her interest in whom has no deeper root than the bare supposition of his being interested in herself. Having become betrothed, she strains her fancy to apply to this single being all the extravagances she has ever read of in romances, swears love for him, soon herself believes in it, having grown accustomed constantly to unite his image with her excited general sensual impulse, and afterwards obeys at once her duty and her inclination, when she remains faith-

ful to this man, the father of her children, for whom she has conceived respect and friendship, and to whom she has grown accustomed. Closely examined, however, all these ingredients—general sexual impulse, fancy, respect, friendship, fidelity to duty, &c.—mingle and blend them as one may, still give no spark of what may and should be singly and alone denoted by the name love; and what appears to be such is for the most part a delusion of others, and soon even of the actors themselves, since after the given pledge, they are bound in a becoming fashion to give away also a heart of love, and for the rest, in the happy hours of betrothed lovers, they sufficiently amuse themselves. The bridegroom believes the cheat as willingly as the bride practises it, for what does not man believe if only it sufficiently flatters his vanity? After the wedding, when both parties have other things to think of, the comedy comes to an end soon enough, whether it be played in earnest or in jest.

The essential fact of the matter is, that the *conscious* knowledge of mental qualities can always and ever only bring about *conscious* mental relations, respect and friendship, and that friendship and love are things different as light from darkness. Friendship can also awake no love, for when, *e.g.*, in a friendship between two young people of different sex, a little love easily insinuates itself, this is only a liberation of the general sexual impulse in a direction facilitated by mutual confidences, or they might have fallen in love even without friendship, and this slumbering potential love has been only aroused through opportunity. But there may very well be, at least on the man's side, a pure friendship without any sexual ingredients (especially if the sexual love is already fixed in another quarter), and if this is said not to be possible on the woman's side, this is only because women are generally capable of no pure and true friendship, with men as little with one another, because friendship is a product of the conscious mind, but they are only capable of what

is great, when they draw from the well of the unconscious life of the soul. That friendship is a much more indispensable and solid foundation of a lasting good relation for the individual wellbeing of the married pair than love does not admit of doubt; and it is a fortunate circumstance that the same relation of characters and mental qualities, which has power to evoke the strongest love, forms at the same time the best substructure of friendship, that is, as we shall see later on, the *polar completion*, which includes fundamental harmony as well as diametrical opposition on this common ground. It is only to be remarked that in friendship the stress is laid on harmony, but in love on contrast, so that there still remains a wide possibility of divergence between love and friendship in the same persons. At all events, friendship, which in the majority of marriages must either take the place of love from the first, or comes imperceptibly to be substituted for it in course of time, is something by no means problematical, but the problem, with which we are here concerned, is that love which precedes sexual union, and passionately urges to it.

Two true friends, just as two lovers also, cannot live without one another, and are capable of making sacrifices for each other, but what a difference between friendship and love! The one a beautiful mild autumn evening of full-toned colour, the other an awful rapturous vernal tempest; the one the lightly-living gods of Olympus, the other the heaven-storming Titans; the one self-sure and self-satisfied, the other "hoping and fearing in passionate pain;" the one perceiving its limits with full consciousness, the other always striving after infinitude in longing, joy and sorrow, "now shouting in triumph, now sunk in despair;" the one a clear and pure harmony, the other the ghostly tinkling and rustling of the Eolian harp, the eternally incomprehensible, unutterable, ineffable, because never to be grasped by consciousness, the mysterious music sounding from a home far far away; the one a

bright temple, the other an eternally veiled mystery. No year passes in this our Europe without a number of self-murders, double murders, and cases of insanity due to unsuccessful love; but I know no instance of any one having killed himself or lost his wits through unreturned friendship. That and the many existences marred by love (especially of women, and were it only for weeks or months) prove clearly enough, that in love one has not to do with a farce, a romantic drollery, but with a very real power, a demon who ever and again demands his victims. The sexual doings of humanity in all the easily pierced masquerading and mumming are so singular, so absurd, so comical and ridiculous, and yet for the most part so tragical, that there is only one way of failing to see the whole absurdity, that is, by standing in the midst of it, when it appears to us, as to a drunkard in a company of drunkards; we find everything quite natural and in order. The only difference is, that every one can when sober have the instructive spectacle of a drunken revel, but not be sexless; or one must be far gone in years, or must (as I myself) have already observed and reflected on these doings *before* having taken part in them, and then have doubted (as I have), whether oneself or all the rest of the world was crazed. And all this is brought about by that demon, whom already the ancients feared.

But now, what then is that demon, who thus sprawls himself out and will into the infinite, and makes the whole world dance on his fool's rope, what is he then in fine? His *goal* is sexual satisfaction, not exactly sexual satisfaction in general, but only with this particular individual, whatever shift he may make to disguise and deny it, and however big he may talk with hollow phrases. For if it were not this, what should it be? Return love? No indeed! With the hottest return of love is no one seriously contented, even with the possibility of constant intercourse, if the *impossibility* of possession be clear, and many a one in such a situation has blown out

his brains. For the *possession* of the beloved one, on the other hand, the lover gives up everything; even if return love is utterly wanting he can be consoled with possession, as the many marriages prove, which are brought about by base bribing of the bride, or the parents, with rank, wealth, birth, &c., and finally the instances of rape confirm, where even *crime* is not shunned by the demon of love. But when the sexual power is extinguished, there love also is extinguished; read the letters of Abelard and Heloise; *she* still all fire, life, and love; *he* cool, babbling friendship. So, too, immediately after satisfaction passion perceptibly declines, if it do not also directly disappear, which, however, often speedily follows, although friendly and so-called Platonic love may always continue. No passion of love very long survives enjoyment, at least not in the man, as all experience testifies, although it may at first increase for a brief time; for whatever subsequently is attributed to love in *this* sense is mostly feigned for other purposes. Love is a tempest; it does not discharge its electrical material in a single flash, but by degrees in many; and when it has discharged itself, then comes the cool wind, and the sky of consciousness gets clear again, and gazes in astonishment at the fertilising rain on the ground, and the clouds drawing off in the distant horizon.

The goal of the demon, then, is really and truly nothing but sexual satisfaction, and with a particular individual, and everything connected therewith, as, harmony of soul, adoration, admiration, is only weak and false show, or it is something else, something next door to love. The test is simply this, does it disappear without a trace when the cool wind comes? What then remains has not been love, but friendship. It is however *by no means* thereby affirmed that he who is possessed by this demon must have the goal of sexual satisfaction in his *consciousness;* on the contrary, the highest and purest love will not at all confess this aim, and especially in a first love the thought is certainly far away, that this nameless longing should

have merely this end. Even if the thought of sexual union is obtruded from without, it is at this stage rejected from consciousness with chaste aversion, as one inadequate to the infinity of longing and hope, and unworthy the unapproachable sublimity of the dreamt ideal; and only in later stages does the unconscious aim come to appear in consciousness, though always as *secondary*, when the heavenly dream has so far descended to earth as to see in sexual union no longer a desecration of its ideal,—a point of view for whose speedy advent Nature has taken good care, by instinctively compelling the lovers to pass from the tenderest glances step by step to ever more intimate bodily contact, each one bound up in ever stronger stimulation of sense. The illimitable nature of the longing and striving spring, then, precisely from the ineffableness and incomprehensibility of a conscious goal, which would be absurd want of aim, were not an unconscious purpose the invisible spring of this powerful apparatus of feeling,—an unconscious purpose, of which we can only say that the sexual union of these particular individuals must be the means to its fulfilment. Only when this sole and exclusive goal has not yet as such (either not at all, or only as secondary goal of endeavour) entered into consciousness, is love a perfectly healthy process, a process without inner contradiction; only then does feeling possess that innocence which alone lends it true nobility and charm. When on the other hand sexual intercourse is recognised by consciousness as the *only* aim of the extravagance of the feeling of love, love as such ceases to be a healthy process; for from that moment consciousness also perceives the absurdity of the vastness of this impulse, the want of proportion in means and end in relation to the individual, and it now enters into the passion with the certainty for *its* part of doing a stupid thing—an uncomfortable feeling from which it can just as little ever again completely free itself, as from egoism itself.

Only when the purpose of love has not yet become

conscious, when the individual concerned does not know that the blending of essence hoped and longed for by the mysticism of love in the union with the beloved one is only to be effected *realiter* in a third party (the offspring) only then does it possess the power to take captive the individual with all his egoistic interests so ruthlessly, that even the highest sacrifices appear insignificant and naught in comparison with the dreams of heaven, and the high purpose of the Unconscious is fulfilled with *perfect regardlessness.* On the other hand, when a human being, who has believed himself to have overcome the illusion, is again caught by consuming passion, love often shapes itself to his consciousness as a gloomy dæmonic power, so that he appears like a madman with full understanding, who, lashed by the fire of passion, no longer even believes in the happiness, to which, as it were without his will, he brings his all as an offering, for which he may even be compelled to commit a crime. Quite otherwise is it when the innocence of unconscious youth looks for the first time upon the *fata morgana* which the Eden of promise shows it in the refulgence of the glowing dawn. Then the mystical presentiment of the eternal unity of all unconscious being, and of the unnaturalness of separation from the beloved one, rises before it, then the longing springs up and glows, to annihilate the limitations of individuality which separate from the loved one, to perish and to be merged with the whole self in that being that is dearer to it than its own, in order, like a phœnix consumed in the love-flames, only to find again the better life in the beloved object as unselfish part of its own self. And the souls which are one without knowing it, and which can approach no nearer by ever so close an embrace than they eternally are, pine for a blending which can never be theirs so long as they remain distinct individuals. But the supreme significance of the sole result, in which they actually effect a real blending of their qualities, their virtues and vices (to say nothing of older ancestral claims

never to be silenced) they so completely misapprehend, that they afterwards think themselves bound to deny it to have been even the unconscious goal of their ardent longings (comp. "Ges. Phil. Abhandl.," pp. 86, 87).

We have now got so far as to recognise the love to a particular individual as an *instinct*, for we have found in it a continual series of efforts and actions all working towards a single aim, which yet does not appear in consciousness as the one sole aim. The final question is only this: What is the significance of that unconscious purpose, what is the meaning of an instinct, which calls forth such an obstinate selection in sexual gratification, and how is it furthered by the sight of just this particular individual? Of that which can interest the household of Nature and make instinct necessary, manifestly nothing further is changed by the sexual selection of individuals than the bodily and mental constitution of the child. There remains then, after the previous discussion, the sole possible answer given by Schopenhauer, ("Welt als Wille und Vorstellung," vol. ii., chap. 44, Metaphysic of Sexual Love), namely, that the instinct of love provides for a composition and constitution of succeeding generations corresponding as far as possible to the IDEA of the human race, and that the dreamed-of bliss in the arms of the beloved one is nothing but the deceptive bait, by means of which the Unconscious deludes conscious *egoism*, and leads to the sacrifice of self-love in favour of the succeeding generation, which conscious reflection could never effect by itself. It is the same principle, in special application to man, which Darwin subsequently established in his theory of natural selection as general law of nature, namely, that the *ennoblement of the species* is brought about, in addition to the succumbing of the more unfit specimens of the race through the struggle for existence, by means of a natural *instinct of sexual selection*. Nature knows no higher interests than those of the race, for the race is related to the individual, as the infinite to the finite. Just as *we* demand of

the individual that he consciously sacrifice his egoism, nay, his life, to the welfare of the whole, so does *Nature* with far less hesitation sacrifice egoism, nay, the life, of the individual to the welfare of the race through the medium of instinct (think of the maternal animal which does not shun death to protect its young, and the male in the rut, which fights even to death for the possession of the female). This can certainly only be called wise and motherly. *We* compel the conscious sacrifices of the individual through *fear of punishment;* Nature is kinder, she compels them through *hope of reward;* that is certainly more motherly! Therefore let no one complain of these hopes and their disillusion, unless, like Schopenhauer, he has to complain of the existence and persistence of Nature. For the rest the juggling delusion is as *wholesome* and as *indispensable* as that which parents often see themselves compelled to impose upon children for their good. For of all natural ends there can manifestly be *none higher* than the welfare and most favourable constitution of the next generation, since not that generation alone, but the whole future of the race is dependent thereon; thus the affair is, in fact, highly important, and the noise, which is made about it in the world, by no means too great. But nevertheless the want of proportion between means and end (love-passion and nature of the child) appears, when once comprehended, absurd *to the consciousness of the individual*, and the process of love is charged for him with an inner contradiction to his egoism; for possibly conscious thought *in abstracto*, but hardly conscious will *in concreto*, can disengage itself from the point of view of egoism, at the most it may be brought by deeper insight passively to permit Nature's ends to be accomplished in preference to its own.

The description in detail of the way in which the bodily and mental qualities act on the Unconscious, and excite the unconscious will to beget this particular new human being which must result from the intercourse of these individuals, has been given in a masterly manner by Scho-

penhauer. I refer to the chapter cited above, and only give here a short abstract for completeness' sake. Two prime factors are to be distinguished: (1) individuals exert a greater sexual charm the more completely they represent corporeally and mentally the IDEA of the race, and the more nearly they approach the acme of the procreative power; (2) that individual has the greatest sexual charm for any other individual which, as far as possible, neutralises the latter's defects by opposite defects, thus producing a child which represents the type of the race in the greatest possible perfection. One sees that under the first head will come the bodily and mental attractive force of symmetry, beauty, nobility, and grace, to cause the awakening of sexual love, and one also now understands how it comes about, namely, by the circuitous path of an unconscious final causality, whilst before it was not at all evident how bodily and mental excellence could have anything to do with sexual love. The influence of age is likewise explained by the acme of procreative power (18–28 years for the woman, 24–36 for the man). As another example, I may instance the powerful charm which a voluptuous female bosom exerts on the man; the medium is the unconscious idea of the abundant nutrition of the new-born child. A powerful muscular frame (*e.g.*, calves) also promises a powerful constitution of the child, and thus exerts a considerable charm. All such trifles are most carefully reviewed, and people talk about them with an air of importance, but no one reflects what an insignificant more or less in calves and bosoms have to do with the sexual pleasure.

The first point contains the reason why, *generally* speaking, the individuals with the most perfect mental and bodily constitution appear most desirable to the other sex; the second point, why the same persons appear to have very different attractive power for members of the other sex, and why totally different natures are the most captivating of all. Both points may be anywhere put to the

test, and they are found confirmed in the smallest details, *if only a deduction be always made* for what is *not* desired and wished for from immediate instinctive sexual inclination, but from other rational or irrational conscious motives. Tall men prefer short women, and *vice versâ;* thin, stout; snub-nosed, long-nosed; blondes, brunettes; the intellectual, the naive; always, be it understood, only in sexual relations. Æsthetically, people do *not* generally find their polar contrasts beautiful, but their doubles. Many tall women will also, from vanity, refuse to marry a short man. It is clear that the sexual pleasure rests on *quite other* suppositions than the practical, moral, æsthetic, and agreeable, which explains the passionate love for individuals whom the lover in other respects cannot help hating and despising. Truly passion in such cases does all that is possible to *dazzle* the calm judgment, and to attune it in its favour; it is therefore decidedly correct that there is no sexual love without blindness. The disillusion which occurs on the decline of passion essentially contributes to strengthen the conversion of love into indifference or hate, as we even find the latter frequently at the bottom of the heart, not only in amours, but even among married people.

It is well known that the strongest passions are not excited by the most beautiful individuals, but, on the contrary, more frequently by the ugly. This is owing to the circumstance that the strongest passion consists only in the most concentrated individualising of the sexual impulse, and this arises only by the encounter of qualities in polar opposition. In nations, where life is generally less intellectual than sensuous, the bodily qualities almost exclusively decide the issue, wherefore also among them the instantaneous origination of the most violent passions. On the other hand, among the educated classes of nations of higher mental development, even with respect to influence on the unconscious sexual choice, the mental qualities outweigh the corporeal. Accordingly, here for the most part a closer

acquaintance is necessary for the birth of love, unless the lucid vision of the Unconscious, stimulated by the view of a certain countenance, serve the same end, as may often occur; especially in the case of women, who stand nearer to the source of the Unconscious. But also among men of a highly intellectual cast of mind, the experience is sufficiently common of a first meeting with a rare feminine nature involving them in enchanted and indestructible bonds, to seek a cause for which the mind struggles in vain. Ye who still doubt magic, action of mind on mind without the ordinary means of rational communication, through the medium of symbol, which is only understood by the Unconscious—will ye also deny Love?

The sum of this chapter is as follows: Man instinctively seeks an individual of the other sex to gratify a physical impulse, in the illusory expectation of thereby attaining a higher enjoyment than from any other kind of gratification; his unconscious aim, therefore, is, in the main, procreation. Man instinctively seeks that individual of the other sex, whose nature blended with his own, represents the type of the race in the most perfect way possible, in the vain hope of having an incomparably higher enjoyment in sexual union with this individual than with any other, nay, of absolutely partaking the most exceeding bliss. His unconscious aim therein is the begetting of such an individual as most completely represents the IDEA of the race. This unconscious endeavour after the purest possible realisation of the IDEA of the race involves no new principle, but is *the same principle, which governed organic formation in the wider sense, applied to procreation* (which is indeed only a special form of organic formation, as physiology shows), and is screwed up to a high degree of subtility through the numbers and fineness of the differences in the human race.—Among animals this factor of sexual selection is by no means wanting; it is only presented in a simpler form on account of the smaller differences, and essentially concerns only the first point, the

selection of such individuals as represent as completely as possible the type of the race. Thus, among many animals (fowls, seals, moles, certain apes), the males fight for the possession of those females which appear specially desirable. These pre-eminently desirable individuals are, among many gay-coloured animals, those with the most beautiful colours, and within the limits of a species among the different races or varieties, the individuals of the same race, *e.g.*, among men and dogs. Curs often make the greatest sacrifices in order to come together with a bitch of their own breed with whom they have fallen in love. Not only will they run many miles, but I know even a case where a dog every night, in spite of his cross clog, visited his mistress at a distance of more than five miles, and returned every morning exhausted and jaded; as the clog was of no avail, the chain was put on him, but he then became so wild that he was again liberated, as it was feared he would go mad. There were at the time in his own yard a large number of bitches. Thorough-bred stallions, too, are said usually to disdain copulation with common worn-out mares.

Schopenhauer very correctly remarks, that we may conclude from the instinct of sexual love, which we ourselves possess, to the instincts of animals, and assume that even among them consciousness would be disappointed of the expectation of a special enjoyment. This illusion arises, however, only from the impulse, is proportional to the strength of the impulse, and is nothing else but the impulse itself combined with the application of the conscious experience, that the pleasure of the gratification of an impulse is generally proportional to the strength of the impulse, a supposition which is not confirmed by the impulses, whose chief weight and importance appertains to the Unconscious (see sec. C. Chap. iii.), and therefore becomes a deceptive illusion. This remark is, therefore, to be confined to those animals whose consciousness is capable of such generalisations; among the lower ones it stops short at the constraining impulse, without reaching to the expectation of

enjoyment.—For the rest, how useful also for the individuals of the higher kinds of animals that illusion is, is seen herein, that this sexual illusion is just the first and most important means in nature for inspiring individuals with that interest for one another, which is requisite, in order to make the mind in a sufficient degree receptive for sympathy. The ties of marriage and of the family are therefore even among animals, as among rude men, the first stages in the progress to conscious friendship and morality; they are the first flush of dawning culture, of fairer and nobler feelings, and general readiness for sacrifice.

Some may perhaps be inclined to reply that, according to the theory of polar complements, no unhappy love can occur, but this is manifestly an over-hasty and mistaken objection. For, if A is in love with B, that means B is a suitable complement to A, or A will beget *more perfect* children with B than with *others*. But now is it by no means necessary for A to be a suitable complement to B, but B can perhaps beget more perfect children with many others than with A, if, *e.g.*, A is a rather imperfect presentation of the idea of the race; consequently B by no means needs to be enamoured of A. Only when both are superior individuals will also B with difficulty find an individual with whom he can beget more perfect children than with A, and then are both simultaneously seized by passion. Then are they like the re-found halves of the parted primitive man in the Platonic myth. Add to this, that, in such a case, this polar accord is not merely to the advantage of the children, but in *another* respect, than the passion of love imagines, to the parents also; to wit, because, as before remarked, for the highest friendship, too, the polar harmony of souls is the favourable condition.

For the understanding of those to whom the result of the last chapter may seem new and repulsive, I call attention, in conclusion, to the following:—(1) That, as long

as the illusion of unconscious impulse persists intact, this illusion has for feeling the same value as truth. (2.) That even *after* the discovery of the illusion, and before complete resignation to egoism, thus in the state of the strongest most unbroken contradiction between the selfish conscious, and the unselfish, unconscious Will working merely for universal ends, that even in this state, I say, the Unconscious constantly shows itself at the same time as the superior and the master of Consciousness, and accordingly the satisfaction of the conscious at the expense of the non-satisfaction of the unconscious Will causes more pain than the reverse. (3.) Lastly, that this variance of the general unconscious with the egoistic conscious Will finds its positive reconciliation in the truly philosophical point of view (to be demonstrated in Chap. xiv. C.), where self-renunciation, *i.e.*, foregoing individual welfare, and complete devotion to the process and welfare of the universal, is presented as first principle of practical philosophy, and thus also all instincts, absurd to conscious egoism but beneficial for the whole, are *fully justified.*

We should altogether err, if we thought that the explanation of love by *unconscious* reference to an end in the child to be begotten materialised the eternal spring of the human heart, or robbed the yet innocent feelings of their fine idealistic lustre. Far from that! What could more certainly raise love above the coarseness of sensuality and for ever protect it from all relapse, than its derivation from an unconscious purpose, which is only concerned with generation, but excludes sensuality and voluptuousness from the causes of individualised love, and only permits them to be an accessory vehicle, which may better protect the infinite longing from entirely missing its unconscious purpose? Philosophic speculation does no more than unveil the illusion in which the natural man is entangled, the illusion that those mystical feelings *in themselves* possess a rational foundation or warrant. At the same time, however, it replaces this illusion by the

scientific insight that these feelings have the greatest possible authorisation, and rest on the deepest and noblest ground of all, and that they are, in fact, infinitely more important for the development of the human race than fancy permits itself to dream (comp., farther on, Chap. x. B.; and also the conclusion of Chap. xi. B.) It thus gives to the everlasting theme of poetry, which hitherto has appeared baseless illusion, by critically annihilating its imaginary value for egoism, and assigning it in compensation a quite unexpected significance in respect of the welfare of mankind, a foundation so philosophical, that the dullest Philistine must cease from mocking and acknowledge the immense practical consequence of the whole affair.

III.

THE UNCONSCIOUS IN FEELING.

If I have toothache and a pain in my finger, there are apparently two kinds of feeling; for the one is in the tooth, the other in the finger. Did I not possess the ability to project my perceptions into space, I should not feel two separate pains, but a single compound one, just as with two pure tones (without upper tones), at the interval of an octave, only one is absolutely heard—the lower note—but with a different timbre. The local difference of the perception thus confers upon the mind the ability to dissect the pain-harmony into its elements in conformity with the differently localised perceptions—to combine one part with this, another with that space-perception, and thus to establish the duality. But now things may be spatially twofold and yet incapable of discrimination, as, *e.g.*, two congruent triangles. This can certainly not be asserted of toothache and finger-ache. In the first place, they can only be discriminated in degree, *i.e.*, in intensive quantity, and secondly by their quality; for with equal strength pain can be continuous or intermittent, burning, cooling, crushing, beating, stinging, biting, cutting, drawing, palpitating, itching, and exhibit an infinity of variations, baffling all description.

We have hitherto understood by pain the whole phenomenon, but it is a question whether this must not be philosophically prohibited, and whether we should not rather distinguish in this given whole the *sensuous perception* and the smart or *pain in the narrower sense;* for we

have often a kind of perception which produces neither pleasure nor pain, *e.g.*, if I gently press my finger or brush my skin. Whilst this perception remains qualitatively unchanged, and only increases or diminishes in *degree*, pleasure or displeasure may be felt in addition; and is the perception to be all at once included in the pain or the pleasure? We are then compelled to separate them, and soon perceive that the twain are so little one that they rather stand in a causal relation; for the perception (or a part thereof) is the cause of the pain, since the latter comes into existence and disappears with it, and never appears in its absence, although the perception may undoubtedly occur without the pain under particular circumstances.

This separation having been made, the closely allied question arises, whether the distinctions just noticed really exist in the pleasure and pain, or merely in the producing and accompanying circumstances, namely, in the perception? That pain admits of differences in intensive quantity is clear, but does it also admit qualitative differences? Most of the distinctions expressed in words apply to different forms of intermittence, as beating, drawing, palpitating, stinging, cutting, biting, even tickling. Certainly the degree of pain here changes continuously with the degree of perception according to certain more or less regular types, but nothing is to be found of an originally qualitative difference of the pain itself. One would much sooner expect this in the pleasure or displeasure which is called forth by different smells and tastes; but even there one may be convinced by careful introspection that the qualitative difference of pleasure or displeasure is altogether only apparent, and this illusion arises from the circumstance that the separation of pleasure or pain and perception has never hitherto been made, but both are wont to be comprehended with the perception as a single whole, so that now the differences of perception present themselves as differences of this single whole.—That this separa-

tion has never been made is due to the fact that, out of the infinitely multifarious composition of psychical states, one always only learns to separate those groups as independent parts, *the separation of which has a real utility for practical needs.* Thus, *e.g.*, in the accord of a full orchestra, not all tones of a certain pitch are separated out, no matter from what instrument they proceed, including their upper tones, but the upper tones of the most different parts of the scale produced by any instrument are fused with the fundamental tone of the instrument into its timbre, and the groups of tones thus formed, which represent the tones called forth from any single instrument, are alone blended into the accord, simply for the reason that the knowledge of the upper tones possesses no practical interest, but rather the knowledge of the timbres of the instruments. And this practical mode of grasping the groups of tones has become so organised in us, that that, according to mere pitch, although it must manifestly be much easier, has become purely impossible to us—so impossible that only a few years have elapsed since Helmholtz strictly demonstrated the origin of timbres by actually combining the upper tones.

Almost as impossible does it also seem to us now, in self-observation to sharply separate and keep asunder the two elements in the totality of pleasure or pain and the perceptions following and accompanying them; but that such separation must be possible any one can see from this, that both parts are related as cause and effect, and are essentially different. Whoever succeeds in making the trial will find the assertion confirmed, that pleasure and displeasure have only intensively quantitative, but no qualitative differences. Success will be the easier the simpler the examples with which one begins, *e.g.*, whether the pleasure is different in hearing a bell if the note is *c*, and if it is *d*. If insight has once been gained in such simple examples, the truth will be no less evident if one passes gradually to examples which contain greater differ-

ences in the element of perception. A confirmation of the assertion may also be seen in this, that we are able to balance different sensual enjoyments or pains against one another (*e.g.*, whether any one prefers to lay out his half-crown in a bottle of wine, or cake and ice, or beefsteak and beer, or any other sensuous gratification; or whether one will endure the toothache all day long, or rather have the tooth drawn), which *balancing* would not be possible if pleasure and pain were not in all these things only quantitatively different and qualitatively alike; for like can only be *measured* by like.

It is now also clear that *local differences* by no means concern the pain directly, but only the perception, and that only through the perception does an ideal separation of the total pain occur, one part of it being causally referred to this, and another to that perception. If now, strictly speaking, pain has no locality, and only the perception has local relation, the *duality* established by the local difference can only have reference to the perception, but not to the pain, and pain is accordingly not merely *qualitatively alike* in all cases, but is always only *single in the same moment.*

These considerations are confirmed by Wundt in his "Contributions to the Theory of Sense-Perception." He says (pp. 391, 392), "The *essential part* of pain is *identical*, whether it have its seat in one of the objective sense-organs, as the skin, or in some part of the viscera of the trunk. As pain, from whatever cause it may arise —mechanical, chemical stimulus, heat or cold, &c.—is always of the *same* nature, so it exhibits no difference in its essential character, whatever nerves of the body sensitive to pain the pain-exciting stimulus may affect." He further shows "that pain, as it is manifested in the sense-organs proper as only the highest pitch of sensation, so in all the other sensitive organs it is nothing else but the most intense sensation, which follows on the strongest stimuli; that, on the other hand, all organs which are at

all capable of the sensation of pain have also power to serve as media of *sensations*, which cannot be termed *pain*, but which stand in respect of each organ for that which in the case of the sensory organs is the *specific sensation*" (p. 394). "If once attention be called to these precursors and successors of pain, they can also be distinctly perceived, if they do not stand in connection with preceding or succeeding pains" (p. 393). "As we only attend to them when they rise to the pitch of pain, language has also only distinctive designations for the peculiarity of the *pain* of different organs" (p. 395). It is, then, these specific organic sensations, corresponding to the sensations of the special senses, in conjunction with the secondary affection of adjoining tissues, which condition the different colouring of pain, without altering the identity of its essence.

Whoever has apprehended the similarity of pleasure and displeasure in sensuous, will soon admit it also in mental feelings. Whether my friend A or my friend B dies may possibly change the degree but not the kind of my pain, no more than if my wife or my child dies, although my love to both has been of quite a different kind, and also the ideas and thoughts which I entertain on the nature of the loss are quite different. As pain in general has been caused in this case through the representation of the loss, so also in the complex of feeling and thought which one usually comprehends under pain, a difference is introduced through the difference in respect of the loss; but if one again detaches what is pain and nothing but pain, not thought and not imagination, it will be found that this again is identical. The same holds good of the pain which I feel for the loss of a wife, the loss of property which makes me a beggar, and of the loss of my office and my honour owing to calumny. What is pain and nothing but pain is everywhere only different in degree. Likewise in the pleasure which I feel when another, after a long resistance, yields to my stubborn

will, or if I gain a prize in a lottery or obtain a higher post.

That pleasure and displeasure are everywhere alike again follows from this, that one is compared with the other, on which balancing of pleasure and displeasure in the feelings every rational practical reflection, every resolution of mankind depends; for one can indeed only measure *like by like*, not hay by straw or pecks by pounds. In the fact that the whole of human life and the determining grounds of action therein depends on a balancing of the most different kinds of pleasure and displeasure there is implicitly and unconsciously contained, as fundamental condition, the assumption that such different kinds of pleasure and displeasure may in general be weighed against one another; that they are commensurable, *i.e.*, that that which is compared in them is *qualitatively identical*. Were this tacit supposition false the whole of human life would rest upon a prodigious illusion, whose origin and possibility would be absolutely incomprehensible. The *commensurability* of pleasure and displeasure in themselves, which is already expressed in language in the nominal *identity* of all kinds of pleasure and pain, must thus be unconditionally assumed as fact, and it holds good not merely of different kinds of sensuous pleasure, but just as much for sensuous and mental pleasure and displeasure. Think of a man who has the choice of marrying one of two rich sisters, the one clever and ugly, the other stupid and pretty. He weighs the supposed sensuous and mental pleasure against one another, and according as this or that appears to him to preponderate he makes his decision. In the same way a girl led into temptation weighs the pleasure from honour, from virtuous pride, and the hope of the future dignity of a housewife against the pleasure from the promises of the seducer and the joys beckoning her to his side. Again, a believer compares the heavenly joys which are said to flow from earthly renunciation with those earthly joys which he is to renounce, and ac-

cording to the apparent predominance of the one or the other does he seize the earthly or the heavenly part. Such a weighing of sensuous and spiritual pleasure, and the supposition of the essential likeness on which it rests, would only be unintelligible if sensuous and mental were altogether heterogeneous provinces severed by a fixed gulf. This is, however, not the case. The sensuous, too, so far as it is feeling, rests on a subjective spiritual basis; and the spiritual also, so far as it fills consciousness, forms only the blossom of the tree of sense on which it has grown, and from which it can never be torn.

We consider, then, the result established that pleasure and displeasure are in themselves only one thing in all feelings, or that they are different not in quality, but only in degree. That pleasure and displeasure neutralise one another, are related as positive and negative, and the zero between them is the indifference of feeling, is clear. Equally clear is it that it is indifferent which of the two one is inclined to assume as positive, just as indifferent as the question whether the right or the left side of the abscissa be taken as positive (that accordingly Schopenhauer is wrong when he declares displeasure the alone positive and pleasure its negative; he thereby commits the error of confounding contrary and contradictory opposition).

But now the question is, what, then, are pleasure and displeasure? That the mental representation is one of their causes we have seen, but what are they, then, themselves? By mental representation alone they will certainly never be explained, much as ancient and modern philosophers have tried. The simplest self-observation gives the lie to their unsatisfactory deductions, and says that pleasure and displeasure, on the one hand, and thought on the other, are heterogeneous things, which only with great straining can be confounded. On the other hand, it has been acknowledged by most important thinkers of all times that pleasure and displeasure stand in the closest connection with the inmost life of man, with his interests and

inclinations, his desires and strivings,—in a word, with the kingdom of the will. Without intending to enter here more minutely into the opinions of individual philosophers, it may comprehensively be said that all their opinions may be reduced to two fundamental views,—either they conceive pleasure as satisfaction, displeasure as non-satisfaction of desire, or, conversely, desire as idea of future pleasure, aversion (negative desire) as idea of future pain.[1] In the former case will, in the latter feeling, is conceived as the original. Which of the two is correct it is not difficult to see; for, in the first place, in Instinct will, in fact, exists before the representation of pleasure; its proper goal is there another than the individual pleasure of satisfaction; in the second place, possibly through the explanation of pleasure as satisfaction of the will everything in pleasure is sufficiently explained, but not, conversely, everything in the will through the explanation of the same as idea of pleasure. Here the properly impelling factor, the will, as *active causality*, remains perfectly incomprehensible, just because the will is the *externalisation*, but pleasure and displeasure the *return* from this externalisation *to self*, and is therewith the *close* of this process; therefore the *will* must be *the primary*, pleasure the secondary moment.

If we provisionally allow this view to pass, we obtain an unexpected confirmation of the essential identity of pleasure and displeasure in all feelings. We have seen before that volition is likewise always one and the same, and, in the first place, is only discriminated according to the degree of strength, and, in the second place, according

[1] Although the feeling of present non-satisfaction may be always united with positive desire, the feeling of a present (but doubtfully enduring) relative satisfaction frequently with the negative; yet these *present* sensations can in no case be conceived as the desire itself, but only as cause of the desire (more exactly, as occasions or opportunities which indicate to the uprisen or actual world-will the path of its manifestation in the world-process). For desire itself necessarily refers to a not yet existing future state, could, accordingly, always only be explained as an idea or fore-feeling aroused by those present feelings or strengthened by them (comp. Sect. A. Chap. iv.)

to the object, which, however, is no longer will, but idea. If now pleasure is the satisfaction, and displeasure the non-satisfaction of the will, it is clear that these also must always be only one and the same, and can merely be different in degree; but that the apparent qualitative distinctions which they contain are given by accompanying ideas, partly by those which make the object of will, partly by those which bring about the satisfaction of the will. From this there results, for all emotional states, notwithstanding their multiplicity, so great a simplicity that, according to the ancient saying, "*simplex sigillum veri*," this must be regarded as a support to the assertions from which it follows, just as these mutually support and render one another probable through the force of analogy.

The reasons why I have at this particular place touched on these problems of the conscious psychical life are contained in the following two complementary propositions from the psychology of the Unconscious:—(1.) *Where one is conscious of no will in the satisfaction of which an existing pleasure or displeasure could exist, this will is an unconscious one; and* (2.) *the obscure, ineffable, inexpressible in feeling lies in the unconsciousness of the accompanying ideas.* Because the conception of the unconscious *will* was wanting in previous psychology it could not conscientiously unconditionally accept the explanation of pleasure as satisfaction of the will, and because it lacked the notion of the unconscious *idea* it did not know how to deal with the whole province of the feelings, and therefore limited its consideration almost exclusively to the department of thought.

As example of a pleasure through the exercise of unconscious will, one may take the instincts where the purpose lies in the Unconscious, *e.g.*, the maternal pleasure in the new-born child, or the transcendent bliss of the happy lover. Here no will whose satisfaction corresponds to the degree of pleasure at all emerges into consciousness; but we know the metaphysical power of that unconscious

will whose special effects are the several instinctive desires, and which obtains satisfaction through their realisation; and it must be an exceeding high and strong will indeed, whose satisfaction has for its consequence those phenomena of extravagant pleasure, of which the poets in all ages did not know how to sing in strains sufficiently lofty.

Another example is the sensuous pleasure and pain which result from nerve-currents of a certain kind. Lotze, in his "Medical Psychology," shows that sensuous pleasure always occurs along with a furtherance, and pain with a disturbance of organic life. This conscientious investigator, however, expressly acknowledges that only a uniform concomitance can be established, but that what we mean by pain can by no means be derived from the general notion of vital disturbance, that consequently there must be a deeper law connecting the two. Now this is manifestly the unconscious will, which we have become acquainted with as principle of organisation, self-preservation, and self-restoration. As soon as disturbances or furtherances in the sphere of organic life are of such a nature that they are telegraphed to the brain, the satisfaction or non-satisfaction of this unconscious will must be felt as pleasure or displeasure. (For the refutation of some replies to the above assertions on sensuous pleasure and displeasure I refer to Lotze, 2d book, 2d chapter.)

That we very often do not know what it is we really will, nay, even often imagine we are willing the contrary, until by the pain and pleasure resulting from the decision we are instructed concerning our true will, every one will probably have had opportunity of observing in himself and others. In these doubtful cases we often naïvely think that we are willing what appears to us good and laudable, *e.g.*, that a sick relation, whose heir we are to be, may not die, or that in a collision between the common weal and our individual weal the former is preferred, or that an engagement formerly entered into may be kept, or that

our rational conviction and not our inclination and passion may gain the day. This belief may be so strong that afterwards, if the decision falls out contrary to our supposed will, and yet no grief but an unbounded joy takes possession of us, we do not know how to give over astonishment at ourselves, because we are now suddenly aware of disillusion, and learn that we unconsciously have willed the contrary of what we had imagined. Since, now, in this case, we only conclude to our proper will from our pleasure (or pain), this pleasure is manifestly the sign of the satisfaction of an unconscious will. This becomes still more evident if we consider how, from the excessive astonishment that such a will can have unconsciously existed in our own soul, the transition is quite gradual through the stages of slight suspicion, doubt, and conjecture that one indeed willed otherwise than was imagined to the final open self-deception, where we very well know how we willed, but endeavour to persuade ourselves and others, with more or less success, that we willed just the opposite. Closely allied are the cases in which the temptation to self-deception does not at all exist, and the surprise which accompanies the pleasure only consists in this, that for a very long time the will has not emerged into consciousness, as, *e.g.*, when a friend believed to be long dead suddenly enters my room. Even then it is our unconscious will whose satisfaction takes the form of *fearful joy*, but I now do not need to infer the existence of this will in myself from the occurrence of pleasure, but can directly assume it from the *memory* of earlier times, when I have often wished to enclose the lost friend once more in my arms.

We know from Chap. iv. A. that the conscious and unconscious will are essentially distinguished by this, that the idea which forms the object of will is conscious in the one case, unconscious in the other. When we recall this proposition, we perceive the transition of pleasure or pain from unconscious will to those feelings which are

somewhat obscure in that their *quality* is entirely or partially conditioned by *unconscious* ideas. We now see that the former is only a special case of the latter, in that in the former the ideas which form the content of the satisfied *will* remain unconscious, and perhaps only the ideas which *bring satisfaction* become conscious (as, *e.g.*, in maternal love); but this does not quite meet the cases where, immediately on the occurrence of pleasure or displeasure, the existence and the *kind* of the unconscious will are inferred by consciousness, because the latter could only hesitate between two or a very few species of will.

But now the circumstances are rarely so simple that the feeling consists in the satisfaction or non-satisfaction of a single definite desire, but the most different kinds of desires cross one another in the greatest number at every moment, and by the very same event some are gratified, others not gratified; accordingly there is neither *pure* nor *simple* pleasure and displeasure, *i.e.*, there is no pleasure which does not contain a pain, and no pain with which a pleasure is not bound up, but there is also no pleasure which is not compounded of the simultaneous satisfaction of the most different desires. As actual volition is the resultant of all contemporaneous desires, so is also the satisfaction of the will the resultant of all simultaneous satisfactions and non-satisfactions of particular desires; for it comes to the same thing, whether one operates directly with the resultant, or with the several components, and then takes the resultant of the partial results. Now it is evident that one part of the several desires may be conscious, another may, nay, for the most part, will be unconscious; then is the pleasure also compounded of those pleasures which are determined by conscious and those which are determined by unconscious ideas. The latter fact must give that obscure character to the quality of the feeling, that constant remainder, which, with all our effort, can never be grasped by consciousness.

But there are other points besides the unconscious will

where unconscious ideation determines the speciality of the feeling, to wit, the perception or idea producing the feeling may be unconscious to the brain, strange as it at first seems. For it might be thought the idea which produces the satisfaction of the will can only come from outside, or through cerebrally conscious ideation in the play of fancy, and in both cases the resort to consciousness cannot be avoided. But in this it is forgotten that there are other central nervous parts which, just as much as the brain, have a consciousness *per se* which is capable of pleasure and pain. But now one can well imagine, that the feelings of pleasure or pain of these centres can easily be conducted to the brain, without the conduction being so well contrived, that the perceptions themselves, which produce in those centres pleasure or pain, could reach the brain. In this manner the brain probably receives pleasant and painful sensations which have been conducted to it, but not their grounds of origin; and therefore such feelings and moods reflected from other centres in the brain have something very incomprehensible and enigmatical about them, although their power over the cerebral consciousness is not seldom very great. The latter, then, generally searches after other apparent causes of its feelings which are by no means the correct ones. The less the cerebral consciousness has raised itself to a certain independence and elevation, the more power do the moods springing from the relatively unconscious possess over it; thus in the female sex more than in the male, in children more than in adults, in the sick more than in the healthy. Most distinct are these influences in hypochondria, hysteria, and at the period of important sexual changes, *e.g.*, puberty and pregnancy. These influences are also by no means merely expressed in *moods, i.e.*, in the *disposition* to entertain cheerful or gloomy feelings, but they even directly give rise to *feelings* in the cerebral consciousness, as is again best observed in persons suffering from hypochondria.

"Look at that child: what wild delight, what merry skipping, what gladsome laughter, what a glistening eye; all questioning as to the cause would be in vain, or the causes enumerated would be utterly disproportionate to the glee. And suddenly, and again without any conscious reason, all is changed; the child is quietly lost in itself, its eye troubled, its lips pouting, on the point of weeping, peevish and sad, whereas a moment before it was contented and full of mirth" (Carus's "Psyche"). Where else should these feelings, whose peculiarity it is to be referable only to unconscious ideas, take their rise than from vital perceptions of the lower nerve-centres? That in man the power of these feelings appears to us so much the greater the less the independence of the cerebral consciousness, permits us to conclude that among the animals their significance is likewise the greater the lower we descend in the animal scale, which might be expected *à priori*, since in this descent the mental enjoyments and sufferings of the human cerebral consciousness dwindle more and more.

One will now see how, also, other sensuous feelings which, in part, are determined and accompanied by clearly conscious perceptions of the brain, for the rest remain obscure and unintelligible so far as they are brought about by perceptions and feelings of lower centres. Thus, *e.g.*, one may compare the facility with which we can reproduce completely and clearly, as mere idea, any simple feeling that is determined by the perception of the higher senses leading direct to the brain, with the want of success in trying to recall clearly and completely hunger and thirst or sensual enjoyment.

Lastly, there remains the possibility that yet other unconscious ideas help in determining the special nature of the states of feeling. We have, namely, already seen above that sensuous perception frequently only has for its consequence a sensation of pleasure or pain if it occurs with a certain strength, whilst it persists of itself *below*

this degree, as indifferent objective perception, without causing such a feeling. But now hardly any sensuous perception is quite simple, but is compounded of a number of elements which are only combined into a unity through the common act of perception. Still one or several of these partial perceptions may very well be followed by feeling, whilst the other partial perceptions remain indifferent in respect of feeling. Nevertheless, if the union of these different partial perceptions into one total perception is not accidental, but grounded in the nature of the object, not only will those productive of feeling, but also the *indifferent* parts of the whole perception, *blend* with the feeling, and help, at the same time, to determine the quality of the whole mental state, because, indeed, the mind has no interest in undertaking the separation of the feeling-producing from the indifferent parts. Thus, *e.g.*, every characteristic property of the vocal timbre and note influences the character of the pleasurable feeling which is produced in me on hearing a particular singer, and were it not that these slight differences, which only just enable me to distinguish different voices, possess the power to produce a difference in the *degree* of the enjoyment, I should not be in a position to separate the enjoyment, which I have experienced in hearing this particular singer, from those fine shades of the indifferent perception, without losing the special quality of the feeling experienced. This only proves that we have never practised ourselves in separating out what is properly pleasure and displeasure in our psychical states, but have comprehended all states of the mind in which pleasure and displeasure appear, including all accompanying perceptions and ideas (nay, even desires), under the term *Feeling*. One now sees that even among the merely *concomitant* perceptions there may be some unconscious for the brain, as has just been shown in the case of those *productive* of feeling. Still more important, however, do these concomitant ideas become when we pass from the sphere of sensuous perception into that of intellection.

We have now reviewed in general the different modes in which feeling may be determined by unconscious ideas, and perhaps on this occasion already the importance of unconscious ideas for the whole emotional life may have also become visible. This importance cannot be rated too highly. Let any one take for test whatever feeling he pleases, and seek to grasp it with perfectly clear consciousness in its whole extent. It is in vain; for unless satisfied with the most superficial explanation, he will constantly stumble on an *irresolvable* remainder, which mocks at every endeavour to illuminate it with the burning-glass of consciousness. But now, if one asks, what then has been done with the part that has become clear whilst it has been embraced with full consciousness, we shall be obliged to say that it has been translated into thoughts, *i.e., conscious ideas,* and only so far as feeling has been translated into thoughts has it become clearly conscious. But that feeling, even if only partially, has been recast into conscious ideas, sufficiently proves indeed that it already unconsciously *contains* these ideas, for otherwise the thoughts would, in fact, not be *the same* as the feeling. If the previously unconscious part of feeling, on being passed through consciousness, shows itself as material of thought, we may suppose the same also of the part of the feeling not yet interpenetrated by consciousness; for both in the individual and in humanity as a whole, the boundary between the not-understood and the understood part of feeling is always shifting.

Only so far as the feelings can be already translated into thoughts, only so far are they *communicable,* if we disregard the always extremely scanty instinctive language of gesture; for only so far as feelings are capable of being translated into thoughts are they to be rendered into *words.* One knows, however, what difficulty there is in the communication of feelings; how often they are unrecognised and misunderstood; nay, even how often they are declared to be impossible. In general, feelings

can only be understood by him who has had them; only a hypochondriac understands the hypochondriac, only he who has loved, the lover. How often, however, do we fail to understand ourselves; how enigmatical often are our own feelings, especially when they occur for the first time; how liable are we to the greatest self-delusions with regard to them! We are often mastered by a feeling which has already struck firm roots in our inmost being without our suspecting it, and suddenly, on some occasion or other, there fall, as it were, scales from our eyes. One has only to remember how often the souls of pure girls are completely possessed by a first love, which they would with a good conscience stoutly deny; but should the unconsciously loved one incur a danger from which they can save him, then all at once the hitherto bashful maiden stands forth in the full heroism and sacrificing spirit of love, shunning neither ridicule nor slander. Then, however, she also knows at that same moment *that* she loves and *how* she loves. But as in this instance love, so at least once in a lifetime every spiritual feeling, has existed in us, and the process in virtue of which we become self-conscious once for all, is the translation of the unconscious ideas which determined feeling into conscious ideas, *i.e.*, thoughts and words.

IV.

THE UNCONSCIOUS IN CHARACTER AND MORALITY.

THERE is no manifestation of will without an exciting cause or motive. The will of the individual is primarily potential, a latent force, and its passage into the manifestation of energy, into definite volition, requires as sufficient reason a motive which always possesses the form of a mental representation. These psychological premisses I assume. Volition as such only differs in intensity. All other apparent attributes of the volition belong to its contents, *i.e.*, to the mental pictures of the objects of volition, and this content again is connected with the motives. According to the kinds of *objects* most eagerly desired (as sensual enjoyment, goods and gold, praise, honour and renown, successful love, enjoyment of art and artistic productions, knowledge, &c.), is volition itself distinguished into different main tendencies (impulses), as, *e.g.*, inordinate longing after enjoyments of sense, covetousness and avarice, vanity, ambition, and lust of fame, ardour of love, artistic impulse, thirst for knowledge, and the spirit of inquiry, &c.

If, now, this content of volition were *solely* dependent on motives, psychology would be very simple and the mechanism definite for all individuals. Experience shows, however, that one and the same motive, quite apart from accidental differences of disposition, acts differently on different individuals. Public opinion fails to affect one, is all in all to another. To this man the laurel crown of the poet or a beautiful woman seems contemptible, whilst another sacrifices his life-happiness for their possession.

One offers his property to save his honour, another sells it for a bribe. Good doctrines and fine examples spur this man to emulation, and that man they leave unaffected. Rational reflection is here the determiner of all action, there it has no motive power, and the certain prospect of destruction is not able to restrain a third from his folly, &c. For the most part, consciousness can assign no reason why this motive (say, the expected announcement of a new scientific discovery) possesses an attraction for me, why that one (say, the announcement that at the entertainment to which I am invited a gaming-table will be opened) acts as a feeble inducement. The most that can appear in consciousness in the shape of an intermediary is the expectation of a greater or smaller pleasure; but what is enigmatical and unfathomable in my nature is, why I promise myself a great pleasure from hearing of a new discovery, but from the game of hazard a small or no pleasure at all, whilst the converse is the case with my neighbour.

How a particular individual will be affected by this or that motive no one can say prior to *experience;* but if we know how a man reacts on all possible motives, we know all his idiosyncrasies—become acquainted with his *character.* Character is then the mode of reaction on every special class of motives, or, what is the same thing, a condensed expression for the stimulating power of every particular class of desires. As there is no motive which belongs exclusively to one of these classes, always or commonly a greater number of impulses are affected; and the resultant of the desires hereby simultaneously excited is the active will, which unceasingly and immediately involves the act if this is not prevented by physical causes. If we now ask what sort of a process, then, this reaction of the will on motive and this opposition of the desires to the single resultant is, we must confess that we certainly perceive its existence through undoubted inferences from the facts falling within the domain of con-

sciousness, but that we can say nothing with regard to its particular nature, because our consciousness affords no knowledge thereof. In any case, we only know the first term, the motive, and the last term, the particular volition or result; but what that is which reacts on motive we can never *experience*, no more than we can take a look into the nature of this reaction, which altogether wears the character of reflex action or reflectorial instinct, as we have seen in the special case of Compassion and some other impulses in Sect. B. Chap. i. We have, doubtless, in part, a consciousness of the conflict of various desires, but only so far as we have, in former simpler cases, experienced the various desires apart as resultants, and apply our former experience to the present case. How incomplete these experiences are, however, and how imperfectly they are used for the understanding of a present psychical process, every one doubtless will have experienced in his own person.

How often do we fancy that we have weighed with the utmost care the strength of all operative desires, and disregarded none; and yet, when it comes to action, see, to our extreme surprise, that our subtle calculation does not fit the case, for, lo and behold, another and altogether different resultant appears as sovereign will. (The remarks on an unconscious will contained in the last chapter, pp. 252, 253, will recur to the reader. Compare also Chap. iii. C.) It appears, then, that there is, in fact, only *one* sure token of the proper, true, and final will, that is, the *deed* (no matter whether it succeeds, or is at the first attempt checked by external circumstances), but that every other supposition of consciousness with regard to what one properly wills remains uncertain, frequently deceptive, conjecture, which by no means depends on an immediate conscious cognition of the will, but on analogies of experience and their artificial combination. Often the firmest resolve, the strictest intention is dispersed by action like spray before the wind, when the true will emerges from the night of the Unconscious, whilst the intentional.

will was only one-sided or partial desire, or was only imagined by consciousness, and did not exist at all. If, however, the man never acts, as, *e.g.*, in the case where he is impressed with the impossibility of execution, he never knows with absolute certainty what it is he really wills at the bottom of his heart. The so-called conscious *choice* of the will and its hesitancy is by no means a conscious hesitancy of the *will*, but a vacillation of the intellect in estimating the motives and realising present and future circumstances as affected by volition. But if there is no doubt about the knowledge, there is none about the will; *e.g.*, the vacillation of my choice, whether I should marry the clever and ugly or the stupid and pretty sister, is no vacillation of my will, which, meantime, does not emerge at all, but of my understanding with respect to the greatness of the advantages and disadvantages to be expected in either case. After the intellect has chosen, the motive is prepared for the will, namely, the idea of the sum total of satisfaction to be expected in either case.

We may then regard it as settled that the laboratory of volition is hidden in the Unconscious; that we can only get to see the finished result, and then only at the moment when it in fact comes to practical application; and that the glances which we succeed in throwing into the laboratory are only able to afford some uncertain information by the help of mirrors and optical apparatus, which, however, never reveal those unconscious depths of the soul where occur the reaction of the will on motives and its passage into definite volition.

If we must now confess that the excitations of the will remain for us eternally covered with the veil of the Unconscious, it is not to be wondered at that we are also not so easily able to review the causes which condition the stimulating power of different desires, or the dissimilar reaction of the will of different individuals on the same motives; we must be provisionally satisfied with seeing in

them the inmost nature of the *individual*, and therefore call their effect very appropriately *character*, *i.e.*, mark or token of the individual. This much, however, we have seen, that this inmost core of the individual soul whose efflux is the character, that most strictly practical ego of the human being, to which one reckons desert and guilt, and ascribes responsibility, that this peculiar essence which we ourselves are is still more remote from our consciousness and the sublimated ego of pure self-consciousness than anything else in us; that we can most easily get to know this deepest core of ourselves in the same way as we come to know that of other men, namely, by inferences from action. "By their fruits ye shall know them." This saying holds good also for self-knowledge; and how much do we deceive ourselves therein in fancying we have performed actions from quite other motives, especially better motives, than is actually the case, as we sometimes by chance learn to our shame! (For the continuation of the examination of Character, see the second half of Chap. xi., sect. C.)

It may not be superfluous to throw a side-glance at the essence of the ethical from this point of view. There has been much dispute on the point whether virtue can be taught, and theoretically one may still dispute about it as much as in Plato's time, but the practical psychologist has at no time doubted that, apart from *habit*, that second nature of the soul, which is a breaking-in, in the strict sense, because fear is the all-tamer, that without habit, I say, no teaching is able to *produce* morality, but only to *awaken* an existing moral consciousness through the presentation of suitable motives, which otherwise, perhaps, would not reach the pupil in this mode and strength. For it is evident that morality is not a predicate of thought, but of will. The emergence of the will into actuality as reaction on motive we have, however, recognised as a thoroughly unconscious act, which is partly, it is true, dependent on the nature of the motive, but in another part on the mode

of reaction and strength of the will. The motive is always merely *idea*, and can thus not have the predicate *moral;* consequently there remains for morality only that unconscious factor which must be looked upon as part of the character, and belongs to the inmost core of individuality. This foundation of the character may, as has been said, probably be modified by practice and habit (through intentional or accidential partiality of the motives appearing before consciousness), but never by teaching; for the finest knowledge of ethics is dead knowledge if it does not act as motive on the will, and *whether* it shall do so depends solely on the nature of the individual will itself, *i.e.*, on the character. Thus we see also historically that the people who most of all have morality on their lips often have least morality in their character; that people of eminent mental and scientific capacity and culture are not seldom morally worthless people; and that conversely the purest, most unsullied morality is to be found in people of slight mental cultivation, who have never occupied themselves with ethical problems, who often have never enjoyed a good education, and on whom the bad examples surrounding them never acted as incentives, but only as deterrents. Accordingly we further see that all religions, whatever their ethical creed may be, exert equally much or equally little influence on their confessors; nay, even that different stages of culture may possibly affect the coarseness or fineness of the form of the crimes and misdemeanours, but have no real influence on the morality of the character and the goodness and purity of the heart. On the other hand, the morality of one people as compared with that of another is, together with its national character, exclusively determined by its manners and the habits resulting from education; but the national manners again are, apart from the accidents of external position, environment, and inner development, dependent on the *national character.*

The conclusion is: The ethical element in man, *i.e.*, that

which conditions the character of opinions and actions, lies in the deepest night of the Unconscious. Consciousness may perhaps influence actions by emphatically presenting those motives which are adapted to react on the unconscious ethical, but whether and how this reaction follows, consciousness must calmly await, and first learn when the will proceeds to action, whether such will agrees with the conceptions which it entertains of moral and immoral.

It is hereby proved that the process of origination of that to which we assign the predicates moral and immoral, lies in the Unconscious. We must now, in the second place, show that these predicates denote qualities which do not inhere in their subject *in and of themselves*, but which express only relations of the same to a quite definite standpoint of a higher consciousness, *i.e.*, that these predicates are only creations of consciousness, and never can belong to the Unconscious in itself. It immediately follows from this that it would be wrong to talk of a moral instinct, since it is true the actions of mankind as such flow from the unconscious or instinctive part of character, *e.g.*, through the instincts of compassion, gratitude, revenge, selfishness, sensuality, &c.; but this unconscious production can never have anything to do with the notions moral and immoral, because they are only engendered by consciousness, and a conscious instinct would be a *contradictio in adjecto*. The latter remark should protect me from being credited with maintaining an instinctive conscience; on the contrary, I hold conscience to be no simple fact, but a very complex one, the development of which from the very numerous factors of consciousness can never be definitely proved.

We also call lifeless natural phenomena, wind, air, portents, good and bad; further, we assign these predicates to animals and savages or young children, but they only pass into moral and immoral when we make beings responsible for their operation. But we then, again, hold beings

responsible for their actions when their consciousness is developed to such a degree that they can themselves understand the notions of moral and immoral, and make them responsible only for those actions which their consciousness was not prevented from measuring by its own standard. Thus it comes to pass that we call one and the same action moral or immoral in one being but not in another. For example, the strict sense of property which we find in many animals within their own species and narrow community (*e.g.*, among wild horses within the herd in respect to pastures and provender) we do not designate a moral, but only a good quality. Thus we cannot call it immoral when wild peoples offer even their wives to their guests; on the contrary, as a part of hospitality, this might be called moral, because their consciousness is at any rate developed up to this stage, but not to the comprehension of modesty in sexual intercourse. In a little child, we can, at the most, only term bad those malignant outbreaks which at a riper age would cause the same character to be condemned as immoral. Revenge for bloodshed would among ourselves be called immoral; among peoples of less culture it is a moral institution; among quite rude savages a mere act of passion which can be styled neither moral nor immoral. These examples may suffice to prove that moral and immoral are not qualities of the persons, or of their actions in themselves, but only *judyments* on them from a point of view taken by consciousness—*relations* between those beings and their actions on the one hand, and this standpoint of a higher stage of consciousness on the other; that thus Nature, so far as it is *unconscious, does not know* the distinction of moral and immoral. Yes, Nature is in itself not good or bad, but is ever nothing else but natural, *i.e.*, self-adequate. For the universal natural Will has nothing outside itself, because it includes everything and is itself everything; thus there can for it be nothing good or bad, but only for an individual will; for a relation between a will and an

external object is already necessarily presupposed in the notions good and bad.

In all this we by no means desire to disparage the value of the critical point of view adopted by consciousness; we only seek to avoid the error of supposing conceptions to be possible outside this specific point of view which only arise in relation to it. Certainly, if a consciousness be assumed external and prior to Nature (in a personal God), one may also, from the point of view of this consciousness, measure the world by the standard of these conceptions; but if—as we shall be constrained to do for reasons hereafter to be assigned—we reject a consciousness outside the union of mind and matter, the possibility also disappears of applying the standard of those conceptions to the whole unconscious world,—a point on which much unprofitable labour has been expended. But all this by no means lowers the value of those notions, for as, in spite of all partiality and limitation, consciousness for this world of individuation surpasses in importance the Unconscious, so, in the last resort, the moral stands higher than the natural; indeed, consciousness being ultimately also only an unconscious product of Nature, the moral also is not an antithesis of the natural, but only a higher stage of it, to which the natural has risen through its own energy and the instrumentality of consciousness.

I must here content myself with these brief indications, as an ethic worked out in this spirit would require a treatise to itself. I have also deemed it necessary to forego explicitly considering why and how judgments, with the predicates moral and immoral, must arise at a certain stage of consciousness, and what the content of those notions is. I thought I might the more readily do this as the general understanding of those conceptions met with in ordinary life appeared sufficient for the purpose of our present inquiries.

V.

THE UNCONSCIOUS IN THE ÆSTHETIC JUDGMENT AND IN ARTISTIC PRODUCTION.

WITH regard to the perception of the Beautiful there have been current from early times two extreme opinions, which, in the various attempts at compromise, have obtained very different recognition. One party, taking its rise from Plato, rely on this, that in Art the human mind *transcends* the beauty revealed in Nature, and hold this to be impossible unless there indwell in the soul an idea of the beautiful, a certain aspect of which is termed an Ideal, and which serves as a criterion of what is and is not beautiful in Nature, so that the æsthetic judgment is *à priori* and synthetic. The other party point out that in those creations of art which approximate most closely to the alleged ideals there are contained no elements which Nature herself does not offer to the view; that the idealising activity of the artist only consists in an elimination of the ugly, and in the collecting and combining of those elements of beauty which Nature exhibits apart; and that æsthetic science has in its progress more and more demonstrated the psycho-genesis of the æsthetic judgment from given psychological and physiological conditions, so that we may confidently expect a complete illumination of this province, and its purification from all *à priori* and supernatural conceptions.

I hold that each side is partly right, partly wrong. The empiricists are right when they affirm that every æsthetic judgment must be founded on psychological and physiological conditions; and accordingly it is, strictly

speaking, they alone who create scientific Æsthetics; whilst the idealists, by their hypothesis, cut away the foundations of such science, and in strictness have only advanced Æsthetics so far as they were at the same time more or less consciously empiricists, *i.e.*, substantially limited the science through empirical reception of the matter afforded by experience. But suppose the empiricists had obtained their end, and had completely analysed the æsthetic judgment, they would only thereby have proved its objective connection with other spheres—its world-citizenship, as it were, in the realm of spirit as a natural existence, but would have left untouched its subjective origin in the individual consciousness, or would have maintained something altogether false by their implicit assertion that the objective connection and the process of origination in the subjective *consciousness* are identical, which is contradicted by all unprejudiced introspection, and the testimony of the simplest as of the most cultivated taste. The idealists are far nearer the truth when they allege that this process is something lying *beyond* consciousness, *antecedent* to the conscious æsthetic judgment, consequently something *à priori* in respect of the latter. They are again in the wrong, however, when they annihilate all *process* in this *à priori* by their ready-made ideal, which is derived God knows whence, of whose existence consciousness knows nothing, whose objective connection with other psychical phenomena must remain for ever incomprehensible, and whose rigidity stamps it as insufficient when we consider the endless variety of its illustrations.

As soon as æsthetic Idealism wishes to do more than set up its principle in general, as soon as it enters more intimately into the wealth of the given manifold, it sees itself compelled to confess the untenability of the abstract ideal, which is a vague unity, and to admit that the Beautiful is only possible in the most concrete particularity, because individually intuited (*e.g.*, the human ideal as masculine and feminine; the former again as ideal of

the child, boy, youth, man, old man; the ideal of the man again as ideal of a Hercules, Odysseus, Zeus, &c.); that thus the concrete ideal must be no longer a vague unity, but an indefinite plurality of the most definite types. To assert the eternal existence of these infinitely numerous concrete ideals would be to set infinitely numerous miracles in the place of the one miracle of the abstract ideal. If, to escape this difficulty, the vague ideal is posited as a fluid unity concreting into plurality according to circumstances, this process of concretion must still proceed in a mind; but the inability of the absolutely indeterminate one ideal of beauty to concrete itself by its own power would have to be recognised, since no content could come of itself from that which is perfectly void of content. The creative process in the unconscious mind, as whose result the concrete ideal springs into consciousness, accordingly finds no help at all in the hypothetically abstract ideal; it also, however, no longer needs help, for it carries the formal principle of æsthetic formation in *itself*, and does not need to seek it first in the impossible absolute ideal of beauty. Only in this sense of a concrete ideal to be unconsciously created in the concrete case, recent æsthetic idealists even (like Schasler) understand the æsthetic ideal; and æsthetic Idealism so understood is ripe for reconciliation and fusion with æsthetic Empiricism, when it recognises that precisely *through* its correct understanding of the formal process as *à priori* and unconscious it is bound, *à posteriori*, to borrow *empirically* from consciousness the æsthetic *content* of this infinite wealth of concrete ideals to which analysis, reflection, and speculation may then be applied.

To take a very simple example. The abstract idealists would be obliged to judge tone, harmony, and timbre according to an ideal tone, ideal harmony, and ideal timbre, and according to their approximation to the latter to determine their tone-colour; whilst Helmholtz ("On the Sensations of Tone") proves that in all three cases

pleasure is to be conceived as negation of a displeasure, which arises through disturbances in the ear in the form of noise, dissonance, and disagreeable timbre similar to the flickering of light. This displeasure is not æsthetical, but just as much a weak physical pain as colic, toothache, or the pain produced by drawing a slate-pencil across a slate. Thus the æsthetic pleasure in the sensuous part of music has been proved to be objectively connected with physical pain, but the mode of origin of the æsthetic judgment—"this tone, this harmony, this timbre is beautiful"—is by no means this, that I am conscious while listening: "I feel now no pain through disturbances, and yet a gentle excitement of the function of the organ, *ergo* I feel pleasure." Nothing of all these or such-like processes is found in consciousness, but in our consciousness the pleasure is *eo ipso* contemporaneous with the listening; it is then as if brought forth by enchantment, without the most strained attention being able to detect in the subjective event a clue to the mode of origin. This by no means precludes the objectively recognised connection being really completed in the *Unconscious* as process; this is, even according to my view, that which is alone probable, but the result is the only thing which enters into *consciousness*, and that, too, in the first place, *momentarily*, after the complete perception of the sensuous observation; so that here again, also, there is verified the instantaneousness of the process in the Unconscious, its compression into the timeless instant; and, secondly, not as æsthetic *judgment*, but as *feeling* of pleasure or displeasure.

The latter point must be looked at still more closely, and will best serve to clear up any remaining obscurity. As Locke showed, the words which denote sensuous qualities of bodies, as "sweet, red, soft," have a double meaning, which in practice are treated as identical by the common human understanding without harm. In the first place, they denote the state of the mind in perception and

sensation; and, secondly, that quality of external objects which is presumed as cause of this psychical state. Every sensation is in itself individual, but when the common portions are abstracted from different series of similar sensations, there are acquired the notions "sweet, red soft;" and when the objective causes of these abstract sensations are treated as qualitative elements of things already known from other effects, there arise the judgments: "Sugar is sweet, the rose is red, the fur is soft."

The same process is at the bottom of the æsthetic judgment. The mind finds in itself a number of sensations, which, although bound up with individual peculiarities, have yet so much resemblance that an identical portion can be set apart: this receives the name Beautiful. Now when the cause of this sensation is referred to external objects which are constructed of simultaneously occurring perceptions, this cause is stamped as the quality of these objects and likewise receives the name Beautiful; thus there arises the judgment: "The tree is beautiful." It should not surprise us that common sense almost always refers the notion only to the cause, rarely to the sensation, for the same occurs also in "sweet, red, soft," and has its good ground in practice, since his own sensations can only be of interest to the practical man so far as they instruct him with respect to the external world.

The æsthetic judgment is either impossible to him who is lacking in æsthetic feeling, who has no joy in beauty, or it is an unemotional abstraction from acquired general rules without subjective truth. It follows from this that the æsthetic *judgment* is not *à priori*, but rather *à posteriori* or empirical; for both the external object and the æsthetic pleasure are given through experience, and the external cause of pleasure can only lie in the object, as the cause of the sweet sensation of taste only in the sugar. Æsthetic *pleasure* itself, however, which is found in consciousness as an equally inexplicable fact, as the sensation of tone, taste, colour, &c., and like this occurs in any inner ex-

perience as something ready made and given, may owe its origin only to a process in the Unconscious; this might then be called just as well as any other sensation something *à priori*, were not this expression merely in use for conceptions and judgments.

The ability to feel æsthetically (like the ability to feel sweet, sour, bitter, rough, &c.), called Taste, can certainly, like the taste of the tongue and of the palate, be formed and exercised to react on fine differences; it can also by powerful custom, that second nature, be alienated from its first nature, instinct, and spoiled; but in every case the sensation presents itself as a given fact, subject to no caprice. But now æsthetic sensation is distinguished from merely sensuous feelings in this, that it stands on the shoulders of the latter; that it uses them perhaps as material, also as concomitant presentations through which its special quality is in every case determined; but that *as* feeling it stands above them and is built upon them. If, therefore, the unconscious genesis of the sensuous qualities is an immediate reaction of the soul on the nerve irritant, the unconscious genesis of æsthetic sensation is rather a reaction of the soul on ready-made sensuous feelings,—a reaction of the second order, as it were. This is the reason why the origin of sensuous feeling will probably always remain veiled in impenetrable obscurity, whilst we have already partially, in the discursive form of conscious representation, reconstructed and comprehended, *i.e.*, conceptually resolved, the process of origin of æsthetic sensation.

We have as little to trouble ourselves here about the essence of the Beautiful as about the essence of the Moral in the last chapter. As it there sufficed us that the predicate *moral* could only be applied to actions from the point of view of consciousness, but that the actions themselves, to which this predicate is given or refused, are in the last resort incalculable reactions of the Unconscious, so the only point to be considered here is the cognition that the æsthetic judgment is an empirically

established judgment, but has its foundation in æsthetic feeling, whose origination falls entirely within the Unconscious.

If we now pass from the *passive reception* of the beautiful to its *active production*, a short consideration of the creative fancy, and consequently of fancy or imagination, seems in general indispensable. (Comp. also above A. Chap. vii. 1, *b*, pp. 174, 175.) The sensuous faculty of presentation, imagination, or fancy, in its widest sense, has very different degrees of vividness in different persons. According to Fechner's statements, which are confirmed by my own numerous trials of others, women have this power in a higher degree than men, and of the latter, those least of all who are accustomed to think abstractly and to neglect the external world. In the lowest degree, colours cannot at all be imagined, and forms only very indistinctly, without fixity, with shifting outlines, generally only perceptible for brief moments; with higher degrees of imagination, plain, not too large images can be distinctly represented without effort, stationary, in lively colours; and by turning the head, objectively fixed or concurrently moving at will. In the highest degree, the vividness and distinctness does not at all yield to that of the sense-impression; the images can be arranged at pleasure both in the black field of vision of the shut eye, and in the field of vision filled by external sense-impressions (witness that painter who let his model sit for only a quarter of an hour, and then by an effort of will called up the image of the same sitting on the chair, and afterwards portrayed it, so that *as often as he raised his eyes* he saw the person quite distinctly seated on the chair). Further, whole compositions, trains of many figures, or elaborate orchestral compositions, can be carried about merely in idea for months without loss of definition, as we know of Mozart that he never recorded his compositions on paper until necessity drove him to it, but then often wrote down the several orchestral parts without the score

(*e.g.*, the overture to "Don Juan"), and this work became so mechanical to him, that he is said to have *conceived other* compositions at the same time. I considered these illustrations as not without utility for giving the reader, who may be lacking in this intuitive power, some idea of the practicability of framing conceptions at once vast and indivisible. Experience proves that there never was a true genius who did not possess this faculty of sensuous intuition in a large degree, at least in his own department. Moreover, there is no question that if, in our sober, rational age, such examples are still possible, that in earlier ages, when sensuous intuition was much more practised and cultivated, and was less kept under by abstract thinking, when man surrendered himself still more unreservedly to the good and evil whisperings of his genius or dæmon, it is conceivable that, as among the saints, martyrs, prophets, and mystics, so also among inspired artists, a blending of voluntary sense-intuition and involuntary hallucination may have taken place, which had nothing shocking for these children of a more fortunate Nature, not yet at variance with their august mother, but, on the contrary, was so much esteemed, as a condition of every production of the Muses, that the enthusiastic Plato has bequeathed us the declaration (Phædrus): "What an excellent man produces in *divine frenzy, which is better than sober reflection*, namely, the divine, in that the soul recognises as in a brightly shining after-image what it looked upon in the hour of rapture, walking in the footsteps of Deity, and which beholding, it is necessarily filled with rapture and love." "Frenzy is not absolutely an evil, but through it the greatest goods came to Hellas." And even at the time of Cicero poetic inspiration was called *furor poeticus*. In modern times, Shaftesbury in particular has laid stress upon the fundamental importance of *enthusiasm* for the origination of everything true, great, and beautiful.

If we now, however, look at the forms of fancy them-

selves, we find, on decomposing them into their elements, even when we take up the wildest productions of Oriental extravagance, nothing which could not have been obtained by means of sensuous perception aided by a retentive memory. We can discover no new simple colour, no simple smell, taste, tone. Even in the realm of space, which allows the greatest scope for novel constructions, we find in arabesques only the familiar elements of the straight line, the circle, the ellipse, and other well-known curves; nay, even in the animals of fable we rarely find parts derived from the inorganic and vegetable world, and conversely. Invention is limited to disjoining familiar ideas and rearranging the severed parts. If, now, anybody possesses a lively imagination, at the same time a fine sense for the beautiful, and a copious store of remembered ideas ever at command, wherein the beautiful elements are particularly richly represented, it will not be difficult for him, by leaning on Nature, that is, on given sense-perceptions, by eliminating ugly and inserting beautiful elements, which yet do not offend against truth and unity, to create in an artistic fashion. *E.g.*, when any one paints a portrait, essential truth is lost by simply rendering the chance aspect of the person. This would be a mechanical, not an artistic performance. But when the artist places the person in such a light, position, direction, and attitude that he shows himself in the most favourable manner possible; when, of the various moods and expressions during the sitting, the artist retains that which makes the finest impression; and accordingly represses or lets pass all unfavourable and non-beautiful traits and singularities, but, on the other hand, brings into the foreground and places in a favourable light all advantageous traits and details, perhaps even adding new ones so far as the truth of the idea, *i.e.*, the likeness, allows, then he has produced a work of art, for he has *idealised*.

Thus works ordinary talent; it produces artistically by means of *rational selection* and combination, guided by its

æsthetic judgment. At this point stands the ordinary dilettante and the majority of professional artists. They one and all cannot comprehend that these means, supported by technical routine, may perhaps accomplish something excellent, but can never attain to anything great, can never pass out of the well-worn groove of imitation nor produce an *original work;* for, if they admitted that, they must perforce abjure their calling and declare their life to be a failure. Here everything is still done with conscious choice; there is wanting the divine frenzy, the vivifying breath of the Unconscious, which appears to consciousness as higher inexplicable suggestion, which it is forced to apprehend as fact without ever being able to unravel its law. Conscious combination may, in course of time, be acquired by effort of the conscious will, by industry, endurance, and practice. The creation of genius is an unwilled, passive conception; it does not come with the most earnest seeking, but quite unexpectedly, as if fallen from heaven, on journeys, in the theatre, in conversation, everywhere where it is least expected, and always suddenly and instantaneously. Conscious combination works out laboriously the smallest details, and gradually constructs a whole with painful hesitation and head-splitting, with frequent rejecting and resuming of the single parts. The conception of genius receives the whole from one mould, as gift of the gods, unearned by toil; and it is just the details which are wanting to it—must be wanting, because in the larger compositions (grouped images, poetic works) the human mind is too narrow to obtain more than the most general total impression at a single glance. Combination procures the unity of the whole by laborious adaptation and experimentation in detail, and therefore, in spite of all its labour, never accomplishes its purpose, but always allows, in its bungling work, the conglomerate of the details to be visible. Genius, in virtue of the conception from the Unconscious, has, in the necessary appropriateness and

mutual relations of the several parts, a unity so perfect that it can only be compared to the unity of natural organisms, which likewise springs out of the Unconscious.

These phenomena are confirmed by all true geniuses who have instituted and communicated self-observations thereupon,[1] and every one who has ever had a truly original thought in any direction can find it proved in his own person. I will here only quote an observation of the no less artistic than philosophical Schelling (Transcend. Idealism., pp. 459, 460): ". . . As the artist is urged to production involuntarily, and even with inner aversion (accordingly among the ancients the expressions *pati deum*, &c., and hence in general the idea of inspiration through extraneous affiation), so the objective is also added to his production as it were without his action, *i.e.*, itself merely objectively." [P. 454 he says: "Objective is only what

[1] One of the purest geniuses, *i.e.*, least possibly influenced by reflection, and at the same time a thoroughly honest, childlike nature, was Mozart, who expresses himself in a letter (see Jahn's "Mozart," vol. iii. pp. 423–425) in the following remarkable manner with respect to his artistic productions: "And now I come to the most difficult point of all in your letter, and one which I should prefer to pass by altogether, because my pen is not at my service for anything of the sort. But yet I will make an attempt, even if you should find it somewhat ridiculous. What, you ask, is my method in writing and elaborating my large and lumbering things? I can in fact say nothing more about it than this: I do not myself know and can never find out. When I am in particularly good condition, perhaps riding in a carriage, or in a walk after a good meal, and in a sleepless night, then the thoughts come to me in a rush, and best of all. *Whence and how—that I do not know and cannot learn.* Those which please me I retain in my head, and hum them perhaps also to myself—at least so others have told me. If I stick to it, there soon come one after another useful crumbs for the pie, according to counterpoint, harmony of the different instruments, &c., &c. That now inflames my soul, namely, if I am not disturbed. Then it goes on growing, and I keep on expanding it and making it more distinct, and the thing, however long it be, becomes indeed almost finished in my head, so that I afterwards survey it at a glance, like a goodly picture or handsome man, and in my imagination do not hear it at all in succession, as it afterwards must be heard, but as a simultaneous whole. That is indeed a feast! *All the finding and making only goes on in me as in a very vivid dream.* But the rehearsal—all together, that is best of all. What now has thus come into being in this way, that I do not easily forget again, and it is perhaps the best gift which the Lord God has given me. When now I afterwards come to write it down, I take out of the sack of my brain what has been previously garnered in the aforesaid manner. Accordingly it gets pretty quickly on to

arises without consciousness; the properly objective in the intuition must therefore also not be procurable with consciousness."] "Just as the man of destiny does not execute what he wills or intends, but what he is obliged to execute through an incomprehensible fate under whose influence he stands, so the artist, however full of design he is, yet, in respect of that which is the properly objective in his production, seems to stand under the influence of a power which separates him from all other men, and compels him to declare or represent things which he himself does not completely see through, and whose import is infinite."

In order, however, to avoid misunderstanding, I must still add the following. In the first place, it is by no means indifferent what soil the genius has prepared in his mind in order that the germs which fall into it from the Unconscious may shoot up in luxuriant organic forms, for when they fall on rock or sand they languish. That is to say, the genius must be practised and educated in his own department, have stored up in his memory a rich supply of striking images, and indeed with a selection

paper; for, as has been said, it is properly speaking already finished; and will, moreover, also be seldom very different from what it was previously in the head. Accordingly I may be disturbed in writing, and even all sorts of things may go on around me, still I go on writing; even also chatting at the same time, namely, of hens and geese, or of Dolly and Joan, &c. But now, with respect to my works, how everything altogether assumes just *that* form or manner that they are Mozartian, and not in the style of anybody else, it just amounts to this, that my nose is just so long and crooked that it has become Mozartian, and not as in other people. For I am unable to characterise it more particularly. It is, however, very natural that people who really have an exterior should also look differently to others both outwardly and inwardly. At any rate, I know that I have as little given myself the one as the other. With this let me off now and for ever, my very good friend; and do not at all think that I break off from any other reason than that I do not know how to go on. You, a scholar, have no idea how bitter this has already been to me." Comp. for confirmation of this the opinions of Schiller, as expressed in the remarkable poem "Happiness," suggested in all probability by the patent contrast between the ease of genius as illustrated in the creations of Goethe, and his own reflective work. Comp. further my essay on Otto Ludwig: "From a Poet's Workshop," in the "Austrian Weekly Journal for Science and Art," 1872, No. 41.

of the beautiful, which must be effected with nice discrimination. For this material is the body in which the Idea yet in the Unconscious and formless will take shape. If the artist has corrupted his æsthetic judgment, and as a consequence has received with predilection unlovely material, this bad ground too will introduce improper elements into the seed-corn which derives it nourishment from it, and thus the plant will not thrive.

In the second place, in what has been said it is not asserted that *every* work of art arises from a *single* conception; thus episodes show in the simplest form the union of different conceptions. For the most part, however, it is a single conception which furnishes the fundamental idea; where that is not so, the unity of the work of art always suffers. The unity of the original total conception, however, by no means excludes—in greater works it even requires—support by partial conceptions, conceptions of the second order, as it were. For if rational work alone is to fill up the entire interval between the first conception and the completed work, there is a danger in the absence of all specialities, unavoidable in the first conception of larger works, of the want of conception in the different parts of the work becoming perceptible, just as in lesser works of purely rational construction, or of the unity of the whole idea being injuriously affected by greater changes in the parts. For all that, there remains a great field for the exercise of the understanding; and if the genius is wanting in requisite energy, endurance, industry, and rational judgment, the gifted conception will bear no fruits for the artist and humanity; for the work remains either uncommenced or unfinished, or worked out only in outline and imperfectly (slovenly executed). Undoubtedly the understanding should always at the same time remain conscious of its position of service, as it were. It must not be hypercritical, and desire to treat professorially the inspirations of the Unconscious, else it spoils the work, introducing by partial improvements

a deterioration in many other respects, and destroying or disturbing the organic unity and naturalness of the work of art. How far, however, the work of reason may be admitted without disturbing the conceptions of the Unconscious, this again not itself, but only the æsthetic taste or tact of the artist, *i.e.*, his unconsciously founded feeling of beauty, has power to determine, and on that account during the *entire* duration of the exercise of the reasoning faculty, the Unconscious must keep guard over the conscious understanding as overseer of the marches. This is the reason why Schelling, and after him Carrière (comp. above, p. 42), were able to explain *all* artistic activity as a *constant* interfusion of unconscious and conscious activity, in which each side is equally indispensable to the other for bringing the result to pass.

Thirdly, the observation that the unconscious will has no influence on the carrying out of the conception must not be misunderstood. Conscious will in general is mainly just its indispensable condition; for only when the whole soul of a man lives and moves in his art do all the threads of his interest converge therein, and there is no power which would be able permanently to turn the will from this its highest endeavour; only then is the influence of the conscious mind on the Unconscious powerful enough to attain truly great, noble, and pure inspirations. On the other hand, conscious will has no influence at the moment of conception; nay, a strained conscious seeking after it, a one-sided concentration of the attention in this direction, immediately hinders the reception of the Idea from the Unconscious, because the causal nexus of the two terms in respect of such extraordinary demands of the Unconscious is so subtile, that every preoccupation of the consciousness in this direction must act disturbingly, every actual one-sided tension of the parts of the brain concerned makes the ground to be traversed uneven. Hence the occurrence of the conception, when quite other parts of the brain are occupied

with quite other thoughts, as soon as through a still looser association of ideas the impulse is given to the causality of the Unconscious; but such an impulse there must be, if it is also for the most part immediately forgotten again, for the universal laws of mind can even here not be transgressed.

In the fourth and last place, it is to be noted that the fructifying conception is never wanting, even in the rational works of mere talent, but is merely limited to such small amounts that they elude ordinary introspection. But when once what is characteristic in this process has been comprehended in the case of rare genius,—and we consider that there are innumerable degrees from it to talent, from talent to the talentless worrying the bare understanding by the help of learnt rules,—an abundance of examples will soon present themselves which more or less exhibit the character of inspiration from the Unconscious; as, for instance, when one is engaged in any work, this or that improvement suddenly occurs at quite another time, and the like. To any one doubting this, I shall, in conclusion, prove that every combination of sensuous presentations, when it is not left purely to chance, but is to lead to a definite end, receives the help of the Unconscious.

The laws of the association of ideas or sequence of thought contain three essential moments: (1.) the evoking idea; (2.) the idea called up; and (3.) the special interest leading to the calling up of the idea. As for the interrelations of the first two apart from the third, and the laws of their connection, they must be referred essentially to the mechanical causality of the molecular vibrations of the brain, to the greater or less affinity of the cerebral vibrations corresponding with the exciting idea to the various latent dispositions in the brain (called by the improper expression, "slumbering *ideas* of memory"). (Comp. pp. 33, 34.) Such a limitation of our consideration to the exciting and the excited idea would, I conceive, be justified

only if there are conditions in human life in which man is free not only from every conscious purpose, but also from the sway or co-operation of every unconscious interest, every passing mood. This is, however, a condition hardly ever occurring, for even if one in appearance completely abandons his train of thought to accident, or if one abandons oneself entirely to the involuntary dreams of fancy, yet always other leading interests, dominant feelings and moods prevail at one time rather than at another, and these will always exert an influence on the association of ideas. Of still greater influence, however, must of course be some special motive determining the train of thought to a particular goal, and this point (cited above as No. 3) it is also with which we have here particularly to deal.

For example, if I look at a right-angled triangle, all manner of ideas may become connected with it without any particular reason; but if I am asked for the proof of some proposition which I should be ashamed not to know, I have a particular notion for linking on to the presentation of the triangle those ideas which are serviceable for the demonstration. It is this interest in the end then which conditions the manner of the association of ideas in the different cases. For if, in the case of the triangle, otherwise any other possible idea might occur to me, only not exactly that one which I want, and this interest in the discovery of the proof brings it about that suitable ideas arise which otherwise most probably would not have been called up, still a motive must be the cause of this. But now, who is the intelligent being who seeks out, among innumerable possible ones, the idea corresponding to an end on this stimulus of some motive? It is certainly not consciousness; for in semi-conscious dreams always only such ideas as correspond to the main interest of the moment, but unintended, occur; in the intentional search of consciousness in the drawers of memory, on the other hand, one is often just left by it in the lurch. Aids

may doubtless be used if what is wanted will not occur to me, but it is not got by importunity; and often, when one is thrown into perplexity by such failures, the idea in question comes hours, nay, days afterwards, suddenly rained in upon consciousness, when one least of all was thinking of it. One sees, then, that it is not consciousness that selects, since it is completely blind, and receives each piece which is fetched from the treasury of memory as a gift.

If consciousness were the selector, it would indeed be able to see by its own light what was *eligible*, which, as is well known, it is *not*, since only that which is *already* selected emerges from the night of the Unconscious. If, then, consciousness *were* the selector, it would grope about in absolute darkness, could accordingly not possibly *choose appropriately*, but only *take at random* what first came to hand. That unknown one, however, does choose *judiciously in fact*, namely, in accordance with the special purpose. According to psychology, which only knows of conscious psychical activity, there is here a manifest contradiction. For experience testifies that an appropriate selection of ideas takes place before their emergence, and denies that this selection is undertaken by consciousness. For us, who have already become acquainted with the purposive activity of the Unconscious on many sides, there is here only a fresh support of our view. It is just a reaction of the Unconscious upon the motive of the conscious will, which, in the form of its manifestation and in its occasional non-appearance on severe partial tension of the brain, perfectly agrees with the creative power of the artist.

The reflection just made holds good of the association of ideas *in abstract thinking as well as in sensuous imagining and artistic combination.* If a result is to be arrived at, the right idea must readily offer itself at the right time from the storehouse of memory; and that it is just the *right* idea which appears, for that the Unconscious alone

can make provision. All aids and artifices of the understanding can only *facilitate* the office of the Unconscious, but never *take it away.*

A suitable and yet simple example is wit, which is a mean between artistic and scientific production, since it pursues artistic aims with, for the most part, abstract material. Every witticism is, according to the common expression, a *flash.* The understanding may perhaps make use of aids to facilitate the flash; practice, especially in the case of puns, can impress the material more vividly on the memory, and altogether strengthen the verbal memory; talent may endow particular persons with an ever-sparkling wit,—in spite of all that, every single witticism remains a gift from above; and even those who think they are privileged in this respect, and have wit completely in their power, must have the experience that just when they most wish to compel it, their talent denies them its services, and that nothing but worn-out absurdities or witticisms learnt by rote will out of their brain. These folk know also quite well that a bottle of wine is a far readier means of setting their faculty a-going than any intentional effort.

If we have gathered from the foregoing that all human artistic production depends on an intrusion of the Unconscious, it will no longer excite surprise to find the laws of beauty contained as much as possible in those organisms of Nature which we have recognised as the most immediate apparition of the Unconscious. This point could not well have been mentioned before; it is, however, one important reason the more for the regular coming into being of organisms according to pre-existing IDEAS. Let one only look at a peacock's feather. Every barb of the feather receives its nutriment from the shaft; the nutriment is the same for all barbs; the colouring matters are for the most part not yet present in the shaft, but are first separated from the common nutritive fluid in the barbs themselves. Every barb receives

different colouring matters at different distances from the shaft, which are sharply separated from one another. The distances of these borders of colour from the shaft are different in the case of every barb. How are they determined? By the aim of giving closed figures, peacock's eyes, in the juxtaposed layers of the barbs. And how can this end be determined? Only by the beauty of the marking and brilliancy of colour.

How insufficient, from the æsthetic point of view, does the Darwinian theory appear! It shows that, on the supposition that the capability of producing coloured markings in the plumage is transmissible by inheritance, the æsthetic taste of the animals in sexual selection must enhance the beauty of the plumage in the course of generations through predominant propagation of beautifully-marked individuals. Undoubtedly! Thus a more may be developed from the less, but whence comes the less? If the coloured marking is not already present in the plumage, how is a sexual selection possible in the coloured marking? Accordingly, that which is to be explained must be already there, if in less degree. The Darwinian theory rests on the assumption that such ability—in this case that of producing coloured marks—is transmissible by inheritance. The transmission of a capacity to successors presupposes, however, its presence in the progenitors. And supposing the conception of inheritance were tolerably clear, which it by no means is (least of all when the separate inheritance of different qualities in the different sexes of the same kind is taken into account), it by no means explains the *capacity* itself in the descendant, but only how this individual has obtained the *possession* of this capacity. The capacity itself remains, even with Darwin, the *qualitas occulta;* he makes no attempt at all to penetrate into its *essence;* he only proves, indeed, that inheritance combined with sexual selection is able, in part *intensively*, to enhance such an already existing capacity

in single instances, partly to procure their further distribution *extensively*. It contributes nothing at all to the explanation of its *essence* and its *first origination*. It can, for example, never show how the individual bird begins so to distribute the deposits of colour on its feathers that they, apparently irregular in the several feathers and barbs, produce in their juxtaposition regular and beautiful markings. But, lastly, if sexual selection be rightly given as a reason for the intensive and extensive enhancement of such capacity, the next question is this:—How does the individual attain to a sexual selection in respect of beauty? If we can only answer this question, especially in the case of marine animals of a low grade, who are surely to be credited with but little conscious æsthetics, by supposing an instinct the unconscious aim of which is concerned with beautifying the species, Darwin is manifestly involved in a circle. We shall, however, perceive in this instinct a means employed by Nature for attaining its end with less trouble than if, foregoing the assistance of the transmission of slight improvements of the bodily constitution, all at once it willed the production of the greatest possible beauty in all individuals singly. In other words, we admire a less troublesome indirect attainment of the end, instead of one more difficult and indirect, as before in the mechanisms of the individual organism; and to have discovered this mechanism in its universality is the indisputable merit of Darwin; only one cannot, as the Materialist, believe that therewith the last word has been spoken.

In a similar way one may see in the improvement of the florescence how the impulse to beauty lies in the mysterious life and motion *of the plant itself*, which in the wild state is only too much *oppressed and stifled in the struggle for existence*. As the plants are in a measure freed from this struggle the endeavour after beauty breaks through, and from the most insignificant blossoms of wild

plants there arise the most splendid flowers under our very eyes. And be it observed, the enticement of insects required to effect fertilisation by means of a more vivid colouring cannot possibly account for this embellishment, since our most beautiful garden flowers have full, that is, *unfruitful* blossoms, and can only be increased in a non-sexual way. Here we have the proof that the impulse to its beautiful unfolding lies *in the plant itself*, and, in the case of wild-flowers, is only *supported*, but by no means produced, by the preference of the insects which visit them. Darwin has never made an attempt to explain how those varieties or departures from the normal type are possible which excel the latter in beauty, and which man *has only to preserve from perishing in the struggle for existence*, that this superiority may be maintained.

But the same holds good of all beauty in the vegetable and animal kingdom, even that of the general form. I declare it to be a first principle that every living thing is as beautiful as it can be, regard being had to its mode of life and propagation. As we saw before that the absolute *fitness* of every arrangement is limited: on the one side, by other aims, whose realisation it would oppose, on the other side, through the resistance of the rigid material, to whose laws the organising principle must bend and adapt itself, precisely in the same manner is the *beauty* of every part limited in all directions by its conformity to the end in view, where it is of practical importance for the being, and secondly, through the resistance of the stubborn material, whose laws must be respected. Thus, *e.g.*, the tendency to the unfolding of the greatest brilliancy of colour possible among the weaker animals (small birds, beetles, butterflies, moths, &c.) is limited by the necessity of their concealing themselves from their persecutors by assimilation to the colour of their surroundings, unless they are secured from their eventual foes by a disagreeable smell or taste (*e.g.*, Heliconidæ), or by an impenetrable hard shell (hard beetles). Wherever, in a species,

the higher claims of existence and its power of competing in the struggle allow of the unfolding of a certain beauty in form and colour, there it forces its way unchecked, even when it appears perfectly purposeless and *worthless* for the competition of the species in the struggle for existence. (Think of the splendour of colour of lower marine animals, or the beauty of certain caterpillars, which are not propagated as such, in which accordingly no sexual selection can take place, so far as their beauty is concerned, in the pupa state.) Among animals adapted for rapid flight the need of hiding themselves is a matter of small concern, but immediately becomes important when flight is out of the question, *e.g.*, among brooding birds. Here we see, in all birds which brood in the open nest, that that sex to which the office of brooding exclusively belongs wears a duller dress than the other. Of smaller birds, both sexes can only wear a robe of brighter hue among those species which brood in a closed nest concealing the brooding bird, whilst a distribution of the unconcealed office of brooding between the sexes excludes both from a brilliant plumage. In like manner, almost all species of butterflies not absolutely protected by an intolerable smell or taste are more or less polymorphous; *i.e.*, whilst the males are beautifully coloured and marked, the females, which must live after copulation till the maturity and deposition of the eggs, are more dingy in hue, or they copy in their external appearance tolerably remote species enjoying a special protection. Where a gorgeous plumage would be an injurious endowment during the whole of life, Nature frequently still seeks to pay its tribute to beauty by a glittering wedding garment, which is exchanged after a short time for a duller garb, as if it wished to glorify with a gleam of poetry the life of the feathered airy dweller in its happy spring of love by a fleeting ray of beauty.

Interesting as the contemplation of organic nature is from the æsthetic point of view, we cannot enter upon

it here for want of space, and must content ourselves with the foregoing suggestions, the development of which we leave to the reader. If we, however, assume our assertions to be admitted, the difference between the artistic production of man and of Nature lies, in the last resort, not in the essence and origin of the conception of the Idea, but only in the mode of its realisation. In Nature's beauty the Idea is nowhere presented to a consciousness before the execution, but the individual, who is at the same time marble and sculptor, realises the Idea perfectly unconsciously; in human artistic production, on the other hand, the instigation of consciousness intervenes. The Idea is not directly realised as natural existence, but as cerebral vibrations, which confront the consciousness of the artist as construction of fancy, whose conversion into external reality depends on the conscious will of the artist.

If, in conclusion, we sum up the result of this chapter, we obtain the following:—The discovery of the beautiful and the creation of the beautiful by man proceed from unconscious processes, whose results, the *feeling* of the beautiful and the *discovery* of the beautiful (conception), are presented in consciousness. These moments form the starting-point of farther conscious work, which, however, at every instant needs more or less the support of the Unconscious. The underlying unconscious process is entirely withdrawn from introspection, but it undoubtedly unites in every single case the same terms, which an absolutely correct Æsthetics would give in discursive succession as the foundation of the beautiful. That such a transformation and resolution into concepts and discursive thinking is at all possible, affords proof that we have not to do in the unconscious process with anything essentially foreign, but that in this and the analytic processes of æsthetic science only the form is distinguished as intuitive and discursive thinking in general, but that thought in itself, or the

logical element, and the moments, from whose intuitive logical union beauty results, are common to both and identical. This holds good, without doubt, just as much for the elementary judgments of so-called formal beauty, as for the material beauty of the highest ideas presented in adequate sensible manifestation. (Leibniz called the discovery of musical proportions an unconscious arithmetic, and the beauty of geometrical figures is in direct ratio to the wealth of mathematical ideas and logical-analytical relations, which in the æsthetic intuition of the same determines the judgment as its unconscious and implicit content.) If the notion of the beautiful was not susceptible of *logical analysis*, if the beautiful were not merely a *particular manifestation of the logical*, we should certainly be obliged to recognise in the creative Unconscious, besides the logical essence, which we have hitherto found to be the only active element, an additional somewhat, heterogeneous, out of all relation with it. But the history of Æsthetics indicates too unmistakably the goal of this science, the derivation of all and every beauty from logical moments (in application to real data of course), to allow of our being diverted by the imperfect character of current explanations from believing in this final aim.

VI.

THE UNCONSCIOUS IN THE ORIGIN OF LANGUAGE.

"As without language not only no philosophical, but no human consciousness at all is conceivable, the foundations of language could not have been consciously laid; and yet the deeper we penetrate into it, the more clearly does it appear that its invention far surpasses in profundity those of the highest conscious product. It is with language as with human beings; we think we behold them come blindly into existence, and at the same time cannot doubt their unfathomable significance even in the smallest particular." In these words of Schelling (Works, div. ii. vol. i. p. 52) the subject of the present chapter has been foreshadowed.

Let us consider first the philosophical value of the grammatical forms and the formation of concepts. In every more developed language we find the distinction of subject and predicate, of subject and object, of substantive, verb, and adjective, and the same conditions for the construction of sentences. In the less developed languages these fundamental forms are at least distinguished by their position in the sentence. Whoever is acquainted with the history of philosophy will know how much it owes to these grammatical forms alone. The notion of the judgment is unquestionably abstracted from the grammatical sentence by the omission of the verbal form. The categories of substance and accident are derived in the same way from subject and predicate; the discovery of a corresponding natural antithesis of substantive and verb is still

an unsolved, perhaps very fruitless philosophical problem; here conscious speculation is still far behind the unconscious creation of the genius of humanity. That the philosophical notions of subject and object, which in strictness were wanting to the consciousness of antiquity but to-day openly govern speculation, have been developed from grammatical notions in which they lay involved unconsciously pre-formed, is certainly not improbable, since their designation already implies it. A corresponding gain to philosophy from the other parts of the sentence, *e.g.*, the so-called more remote object or the third person, is, I am convinced, yet to be expected. Through such bringing into consciousness of the metaphysical thought, to which the verbal form serves as dress, it is true no *new* relations are *created;* but such as hitherto have only existed in consciousness in a roundabout way, and as a united whole only vaguely or instinctively, are reduced to conscious unity, and can now for the first time serve as a sure foundation of further speculation; just as in mathematics the circular and elliptic functions and the functions of Abel all at once reduce to system certain long-known series, and thereby for the first time render possible their general use. Lazarus denotes this by the expression, "Condensation of thought."

When in the history of the world the human mind is for the first time astonished at itself and begins to philosophise, it finds a language ready made for it, fitted out with all the wealth of forms and notions; and "a great part—perhaps the greatest part—of the office of the reason," as Kant says, "consists in dismembering the notions which it already finds in itself." It finds the cases of declension in the substantive, adjective, pronoun, the voices, tenses, and moods of the verb, and the immeasurable wealth of ready-made notions of object and relation. All the categories, which for the most part represent the most important relations, the fundamental notions of all thought, as being, becoming, thinking, feeling, desiring, motion, force, activity, &c., lie before it as ready-made

material, and it requires thousands of years only to find its whereabouts in this wealth of unconscious speculation. Even at the present day the philosophising mind commits the error of the beginner of taking too wide a circuit, and so neglecting that which lies nearest to it, and is perhaps also the most difficult. Still to this day there is no *philosophy of language*, for what really goes by that name is altogether fragmentary, and what is usually offered as such are pretentious appeals to human instinct, which afford no explanation at all (just as in Æsthetics). But if the first Greek philosophers merely kept to the external world, yet philosophy, the farther it has progressed, has ever more clearly perceived that the understanding of one's own thinking is the first task, and that this is admirably furthered by raising the spiritual treasures which are buried in the language of the discoverer, and that the hoary tradition of language, the garment of thought, should not be desecrated by flaunting rags; for language is the Word of God, the Holy Scriptures of philosophy; it is the revelation of the genius of humanity for all time. How much a Plato, Aristotle, Kant, Schelling, and Hegel owe to language the attentive student will not fail to see. Often the source whence they have derived the first incentive to certain results seems to have been tolerably unconscious even to themselves (*e.g.*, in Schelling, the subject of being as not-being or potentiality of being, and the object of being as merely being).

The next inquiry has reference to the question whether language improves with the progress of civilisation. Up to a certain point this is undoubtedly the case; for the language of primitive man must undoubtedly have been hardly distinguishable from the vocal and gesture speech of the brutes, and we know that every language which is now a language of inflexions has been brought quite gradually to perfection through the stages of monosyllabic (*e.g.*, Chinese), agglutinate (*e.g.*, Turkish), and incorporating speech (*e.g.*,

language of the Indians). But if one understands the above question in this sense, whether after the attainment of that state of culture which must be looked upon from the first as a condition of an inflexional language, language continues to improve *with yet higher culture*, not only must this question be answered in the negative, but its contrary must be affirmed. Certainly with progressive culture new objects make their appearance, consequently new conceptions and relations, therefore also new words (*e.g.*, all that concerns railways, telegraphs, and joint-stock companies). There results from this a *material* enrichment of language. This, however, does not contain anything philosophical. Philosophical conceptions (the categories, &c.) remain the same, they become neither more nor less, with few exceptions, as consciousness and the like, conceptions which the ancients of the classical period possessed only vaguely, but not explicitly and consciously. In the same way the series of abstractions, which reduce the endless multiplicity of sensuous phenomena for practical use into abstractions of different orders, experience no considerable changes. For if the special sciences, *e.g.*, zoology and botany, sometimes change their ideas of kinds a little, in part this does not at all affect practical life, in part these changes are excessively small compared with the constancy of most of the classes of notions. The *formal* part of language, however, wherein consists its properly philosophical value, undergoes a process of decomposition and of levelling *pari passu* with the progress of civilisation. The levelling of the Romance languages, especially the French, affords an example, an instance far more striking than that of the levelling of the German language in the Gothic, Old High German, Middle and New High German. The position of the parts of the sentence and of the sentences being fixed once for all, leaves no room for liberty of expression; a declension exists no longer, a neuter gender just as little, the tenses are reduced to four (in German even to two), the passive voice is wanting, all final syllables

are worn off; the affinity of syllabic stems, so expressive in natural languages, has for the most part become unrecognisable through attrition, thrusting out of consonants and other disfigurements, and the capability of forming compounds is lost. And yet German and French are languages infinitely rich and expressive compared with the dreary smoothness of the English, which, in a grammatical point of view, is again approaching with rapid strides the starting-point of the evolution, the Chinese. On the other hand, the farther we recede historically the greater becomes the wealth of forms. Greek has its middle, dual, and aorist, and an incredible capability of composition. The Sanskrit, as the oldest of the inflexional languages known to us, is said to excel all others in beauty and copiousness of forms. It results from this review that language needs no higher development of culture for its formation, but that such development is rather injurious to it, in that it is never able to preserve from corruption that which the past has elaborated, not even when it devotes a conscious and careful effort to its preservation and improvement (as, *e.g.*, the Académie Française). The linguistic development is carried on not only on the large scale and as a whole, but also in detail with the calm necessity of a natural product, and the forms of language, even at the present day, go on growing, deriding all the efforts of consciousness, as if they were independent creations to which the conscious mind only serves as a medium of their proper life.[1] Both this result and also the speculative depth and grandeur of language, as well as, in fine, its marvellous organic unity, which far exceeds the unity of a methodical systematic construction, should preserve us from regarding language as a product of conscious acute reflection. Schelling has said:—"The spirit which created language—and that is not the spirit of the *indivi-*

[1] Comp. Gobineau, "Inquiries on Different Expressions of Sporadic Life," 2d part, in the "Zeitschrift für Philosophie und Philosophische Kritike," vol. lii. p. 181 ff.

dual members of the people—has conceived it *as a whole*, just as creative Nature when she forms a skull has already in her view the nerve which is to traverse it."

To which the following may be added:—For the labour of an *individual*, the foundation is much too complicated and rich. Language is a work of the *masses*—the *people*. For the *conscious labour of many*, however, it is too *indivisible* an organism. Only the *instinct of masses*, as exhibited in the life of the hive and the ant-hill, can have created it. Further, although languages spring from different centres of development, deviate essentially from one another, yet the course of development is, in the main, so similar on all the different theatres of human culture, and with the most diverse national characters, that the agreement of the fundamental forms and the structure of the sentence in all stages of development is only explicable by a common instinct of humanity for forming language, by an all-pervading spirit which everywhere guides the development of language according to the same laws of bloom and decay.—Those to whom all the foregoing reasons do not appear decisive, must perforce allow the following, taken along with the above, to be conclusive, viz.: That all *conscious human* thought is only *possible by the help* of language, since we see that human thought without language (in the uneducated deaf and dumb, and also among healthy men who have grown up without human education), in the most favourable case, very little exceeds that of the cleverest domestic animals. Without language, or with a merely animal vocal language devoid of grammatical forms, a thinking so acute that the marvellously profound organism of universally identical fundamental forms should emerge as its conscious product, is, therefore, quite inexplicable. Rather, all progress in the development of language will be the first *condition* of progress in the elaboration of conscious thought, not its consequence, in that (like every instinct) it occurs at a time

when the culture of the people, as a whole, makes progress in the elaboration of thought a necessity.

Altogether, in the same way then as, beyond a doubt, the language of animals, in some ways so highly developed, or the language of feature, gesture, and natural sound of primitive man, is in production as in import a work of instinct, precisely in the same way must also human verbal language be a conception of genius, a work of the instinct of multitudes. For the rest, this result is confirmed by the most eminent and gifted linguists of this century. Thus, *e.g.*, Heyse, in his "System of Philology," says: "Language is a *natural* product of the human *mind;* its production is necessarily effected, without thoughtful intention and clear consciousness, from an *inner instinct* of the mind." Accordingly, to him language is a product "*not of the particular subjective mind*, or reflective understanding as free activity of the individual as such," but "of the *universal objective* mind, of human reason in its natural foundation." In like manner, Wilhelm von Humboldt ("Ueber das vergleichende Sprachstudium," sec. 13) says: "Thinking of the *natural instinct* of animals, we may call language an *intellectual* instinct of the reason." "It is of no avail to allow thousands and thousands of years for its invention. Language could not be invented unless its type were latent in the human understanding. . . . If any one imagines that the invention of language may take place gradually and progressively, by a reciprocal action, as it were,—that through a portion more of invented language man can become more man, and by this advance again invent more language, he misunderstands the inseparableness of human consciousness and human speech." Language "cannot, properly speaking, be taught; it can only be evoked. We can only favour the conditions, and then leave it to its own unfolding" (comp. below, p. 303 *ff.*) "How could the learner, merely through the expansion of his own developing conscious-

ness, master the spoken thought, if there were not in speaker and hearer the same essence, but differentiated for the sake of individual existence and communion, so that a symbol so refined and yet so personal as is the articulate sound suffices to affect both parties harmoniously like a mediator?" "The comprehension of another's meaning could not rest on a process of internal spontaneity, and intercourse through the medium of speech would be something quite other than the awakening of the hearer's linguistic faculty, if beneath all individual differences there were not a common human nature." Humboldt concludes, then, as we shall establish with greater generality farther on, from the nature of language alone: "That discrete individuality is in general only a phenomenon of the conditioned existence of spiritual beings;" that the conscious human mind and language have sprung from the common primitive foundation of the universal spirit. H. Steinthal, in his celebrated book, "Der Ursprung der Sprache," concludes his excellent objective criticism of his predecessors with the following formulation of the problem:—"Language is not innate in man, not revealed by God—man has *produced* it; but not the mere organic nature of man, but his *mind;* and finally, *not* the thinking *conscious* mind. *What* mind then in humanity, *i.e.*, what form of action of the human mind has produced language?" What other answer is conceivable to this than that of the *unconscious* spiritual activity, which with intuitive correctness acts here in natural instincts, there in intellectual instincts; here in the individual, there in the co-operative instincts; and everywhere alike, everywhere with infallible clairvoyant accuracy answers to the greatness of the need?

VII.

THE UNCONSCIOUS IN THOUGHT.

In the last chapter but one (pp. 283–285) we saw that every effort at recollection with a definite object requires the aid of the Unconscious, if the right idea is to be recalled, because consciousness does not embrace the slumbering ideas of memory,[1] accordingly cannot choose among them. If an unsuitable idea crops up, consciousness immediately perceives it to be inappropriate and rejects it; but all memories which have not yet emerged, but are only on the point of emerging, lie beyond its field of view, thus also outside of its choice; the Unconscious alone can make the appropriate choice. It might, perhaps, be suggested that past ideas are revived quite accidentally, and that consciousness keeps on rejecting the wrong one, until, at last, the right one makes its appearance. In abstract thinking such cases certainly do occur, where one rejects five or even more ideas before the right one occurs. In such cases, however, the process is pretty much the same as in the guessing of riddles, or the solution of a problem by trial, in that consciousness of itself does not exactly know what it wants, *i.e.*, that it knows the condition of fitness only in the form of abstract formulæ of words or numbers, but not in

[1] I here call attention once more to the point that the expression "slumbering ideas of memory" is an improper one, since we have here to do neither with conscious nor unconscious ideas, thus not with ideas at all, but with molecular dispositions of the brain for certain vibrations, on which the Unconscious reacts in the particular instance with certain conscious ideas.

immediate intuition; so that, in every single case, it must first insert the concrete value into the formulæ, and see whether the thing agrees. By this, however, it is evident that the reaction of the Unconscious on a motive, which is itself so obscure that it can only become clear by application to the concrete case, must be a more imperfect one than when the object is apparent in an immediately concrete and intuitive manner, as in the search for an appropriate partial presentation to complete an image, or verse, or melody, when so protracted a trial much more rarely takes place. In the flash of wit this will happen still more rarely; witticisms obtained by a process of trial generally fall very flat. But even in those cases, where experience shows a repeated rejection of the revived ideas, it should not be forgotten that all these rejected ideas are by no means absolutely fortuitous in respect of the particular object, but always tend to this goal, although they may not hit the nail upon the head. But even when this mark is wanting to them, one is obliged to admit that the ideas, which, apart from the particular end in view, would merely arise according to other laws of thought-succession, are just as numerous, and that then in very rare cases, after five or ten ideas have been rejected, the appropriate one would be revived, but in most cases a far greater number of attempts would be requisite. The consequence of this would be the impossibility of producing any regular train of thought; we should soon give up the disproportionate effort through sheer fatigue, and surrender ourselves only to spontaneous dreaming and impressions of the senses, like the inferior animals.

In thinking, the point is, that the right idea occur at the right moment; the intellectual genius (apart from the rapidity of the movement of thought) is only hereby distinguished from the stupid, fools, boobies, imbeciles, and madmen. For inference is always of the same kind. No madman and no dreamer has ever drawn a false simple

conclusion from his premisses, only their premisses are frequently valueless. Sometimes they are intrinsically erroneous, sometimes they are too narrow or too wide, sometimes certain irrelevant premisses are assumed, sometimes several successive inferences are run into one; and these errors are committed, because it is not every simple conclusion that is actually thought; moreover, every following conclusion tacitly implies new premisses. But wrongly to draw a simple conclusion from given premisses is, in my view, just as much beyond the bounds of possibility, as that an atom pushed by two forces should move otherwise than in the diagonal of the parallelogram of forces.

The essence of thinking is that the right ideas occur at the right time. Let us examine this proposition a little more closely. By thought, in the narrow sense, is meant the dividing, combining, and comparing of ideas. *The division* may consist in the cutting up of a space or time-whole, or in abstracting certain attributes. Every idea is divisible into an infinite number of species. The essential point, then, is how the line is drawn between the portion which one wishes to retain and that which one desires to let go. The main object of abstraction is to grasp many sensible particulars into a common notion. This can only contain what is alike in all; the partition must, then, be so made that, of all the simple ideas, only what is similar is retained, and the dissimilar let go. In other words, the idea of the common portion must occur to one possessed of the particulars. This is as distinctly a flash which cannot be forced, as in our former examples; for millions of men stare at the same objects, and only one gifted brain grasps the concept. How much richer in ideas is not the educated than the uneducated man! And the only reason of this is the *interest* in the idea with which the former has been inspired by education and instruction; for one cannot directly furnish anybody with a conception; one may assist him in his abstraction

by bringing forward very many sensuous particulars and excluding already familiar conceptions, but he must in the end find the notion for himself. A considerable difference in talent cannot, however, be supposed between educated and uneducated on the average; accordingly, it can only be the interest in the discovery which conditions the difference in the abundance of conceptions. The like also holds good of the different mental resources of man and brute, although here, certainly, natural endowment co-operates. The greatest discoveries of theoretical science often consist merely in the discovery of a new conception, in the cognition of a piece common to several other notions which has hitherto been disregarded, *e.g.*, the discovery by Newton of the conception gravitation. If it is interest which conditions the eliciting of the common element, the first flash of the conception is the appropriate reaction of the Unconscious on this stimulus of interest.

If this holds good of notions, which consist only in the separation of a common portion of many given ideas, so much the more must it hold of such as contain the relations of different ideas to one another, *e.g.*, equality, inequality, unity, plurality (number), totality, negation, disjunction, causality, &c.; for here the concept is a true creation, certainly out of given material, but still a creation from something not at all to be found as such in the given ideas. *E.g.*, equality cannot as such inhere in the dice A and B, for if B is not, A cannot have equality with B, but when B arises, this cannot change the constitution of A; thus A cannot acquire a quality through the origin of B which it had not before, consequently also not equality with B. The notion of equality can, therefore, not lie in the things, just as little in the perceptions as such produced by things, for the same line of argument may be adopted, consequently the notion of equality must be first created by the mind; but the mind also cannot arbitrarily declare two presentations to be equal or unequal, but only

when the ideas, apart from place and time, are identical, *i.e.*, if the two presentations, succeeding one another at the same spot in the field of vision without a time-interval, would give the impression of a single fixed unchanged presentation. Since this condition can never be satisfied realiter, the process can only be that the mind conceptually separates the identical portion of the two ideas. If it then perceives that the individual residue only consists of the space and time elements of the ideas, and does not affect their matter, it calls them equal, and thus acquires the notion of equality. It is, however, easy to see that, if this whole process is to be carried on consciously, the mind must already possess the faculty of abstraction, and consequently the notion of resemblance, in order to be able to separate the common portion of two representations, *i.e.*, must possess what it has to find, which is a contradiction. There remains then, since every human and animal mind has this conception, nothing but the assumption that this process is in the main carried on unconsciously, and only the result as concept of equality, or this judgment, "A and B are alike," comes into consciousness.

How indispensable the faculty of abstraction and the notion of resemblance contained therein is even for the first foundations of all thinking I shall briefly show by the instance of memory.

All human beings and animals know, when an idea or a perception occurs, whether they are already familiar with the matter of the same or not, *i.e.*, whether the perception is new, arises for the first time, or whether they have had it before. A mere idea, united with the consciousness that it has had a previous existence as a sense-percept, is called *Memory*. The recognition of sensuous perceptions is not denoted by this term, but is at least as important. The question is, How does the mind discover the mark of *former knowledge*, which indeed cannot lie in the idea itself, since every idea in and by itself appears as something new? The most obvious answer is, Through the association of

ideas; for similarity is one of the main conditions of revival. When, then, a perception makes its appearance a second time, the slumbering memory is aroused, and the mind has now, in place of one image, two, a vivid and a weak one, and the latter an instant later, whilst it only finds a single one in the case of new perceptions. Since it does not know itself as cause of the second weak image, it assumes the earlier vivid one to be the cause of the same; but since, on the other hand, the reason why the weak image appears in some cases, not in others, cannot well lie in the perceptions themselves, it assigns the cause of this appearance to a different disposition of the presentative faculty. If, along with the faint idea, the mind had without more ado the consciousness that the idea had been in the mind before, the matter would be explicable, but what is incomprehensible in the affair is just this: how it can come by this consciousness from what has gone before? The problem would not thereby be solved, but only its object pushed back a step farther. But here, now, we are helped by the consideration of similar sense-impressions, which follow one another in such quick succession, that the after-image of the first has not yet died away when the second occurs. Here the mind knows accordingly (1.) the identity of the after-image with the original impression, in virtue of the continuous fading of the latter; (2.) it knows from the weakened impression that the external object has ceased to act, and that only its copy remains; (3.) it knows that the sudden strengthening of the after-image occurring immediately on the second impression is an effect of the latter; (4.) it perceives the equality in content of the second impression with the strengthened copy of the first. From these premises it concludes that the disposition of the representative faculty, which conditioned the rise of the weak image after the second impression, was the existence of the after-image of the first, and that the second impression was the same as the first. As, now, such examples are repeated with different degrees of the

fading of impressions, it is analogically concluded that there, too, when the after-image of the first is no longer present on the occurrence of the second impression, the disposition in question of the representative faculty consists in a slumbering copy, and consequently the consciousness of previous knowledge results every time an idea calls up a weaker one resembling it. Thus, *e.g.*, when images rise before the mind in reverie, they must first attain to a certain degree of completeness, before by association they bring the whole situation lived through for a moment before the mind as a second image, and only at that moment does the consciousness suddenly spring up that one has experienced the thing before; not till then is the awakened memory consciously apprehended *as* memory.

One sees what an enormous apparatus of complicated reflection is requisite in order to produce so apparently simple a fundamental phenomenon, and that it is quite impossible in those times of the infancy of man and animal, when these notions were formed, that such a process should take place in consciousness, *especially as all the inferences here drawn already presuppose the ability to recognise the ideas as well known.* There therefore remains nothing for it but to suppose that this process also takes place in the Unconscious, and only its result instinctively appears in consciousness. The *certainty* also of a prior experience, which memory affords with not too great an interval between the two impressions, could never be attained by means of this artificial fabric of hypotheses and analogies.

Another example is afforded by *Causality.* Without doubt this idea is to be evolved logically, namely, by a calculation of probabilities, starting from the bare presupposition of pure chance, *i.e.*, absence of causation. If, namely, under such and such circumstances an event has occurred n times, the probability that under the same circumstances it will occur next time is $\frac{n+1}{n+2}$. Suppose, now, we call the occurrence of the event necessary when

its probability becomes = 1, then from this the *probability* can be evolved that the occurrence of the event is necessary or not necessary. But, as Kant showed, there is no meaning in causation beyond *the necessity of the occurrence under the circumstances in question*, since the notion of *production* is one arbitrarily introduced, and is, in fine, only an *improper figure of speech.*

Thus we can show the probability that this or that phenomenon is caused by these or those circumstances, and, in fact, our knowledge reaches no farther. Assuredly no one will believe that this is the way in which children and animals arrive at the notion of causality, and yet there is no other way to advance beyond the notion of mere succession to that of necessary sequence or effect; consequently this process also must take place in the Unconscious, and the notion of causality enter into consciousness as its ready-made result.

The same proof may also be given of the other ideas of relation: they can all only be developed discursively by way of logic, but these developments are all so delicate and in part so complicated, that they cannot possibly be wrought out in the consciousness of beings which form these conceptions for the first time; accordingly they appear in consciousness as something ready formed. Now he, who sees the impossibility of getting these conceptions from without and the necessity of forming them *himself*, asserts their a priority; whoever, on the other hand, takes his stand on the fact that such formative processes have no place at all in consciousness, but that their results are rather *given to it* as something ready formed, must maintain their a posteriority. Plato had a feeling of the two-sided truth when he called all learning Reminiscence. Schelling expresses it in the assertion, "So far as the Ego produces everything from itself, all . . . knowledge is *a priori;* but so far as we are not conscious of this productivity, so far is . . . everything *a posteriori.* . . . There are thus *a priori* ideas without

there being innate ideas" (comp. above, p. 24). Thus all the really *a priori* is a something posited by the Unconscious, which only comes into consciousness as result. So far as it is the *prius* of what is given, of the immediate content of consciousness, so far is it still unconscious; in that consciousness reflects on the content it finds, and concludes therefrom to the *prius* producing it, it perceives *a posteriori* the unconsciously active *a priori* (comp. in addition "Das Ding an Sich," pp. 66–73, 83–90). The ordinary empiricism fails to perceive the *a priori* element in the mind; philosophical speculation fails to see that everything *a priori* in the mind is only cognisable *a posteriori* (inductively).

The uniting of presentations, again, may be a joining together in space or in time, as in plastic or musical compositions, then it belongs to artistic production; or a compounding of conceptions into an indivisible idea, as in the formation of definitions; or an union of ideas through forms of relation, where one seeks the reason for the consequent, the matter for the form, the like for the like, for the one alternative the other, for the particular the general, or conversely. In every case one idea is possessed, and another is sought to satisfy the given relation. One has either in oneself what is sought as latent memory or not. In the latter case we have first to discover it, either directly or indirectly; in the former, the important point is that just the right one among the many ideas of memory comes to the surface. In both cases a reaction of the Unconscious is required.

The relation of the general to the particular has its simplest verbal expression in the judgment, when the subject represents the particular, the predicate the general. To every particular, however, there are very many universals, which are all contained in it; therefore every subject may very well receive several predicates; but which is the appropriate one depends solely on the aim of the train of thought. In judging, therefore, the same difficulty recurs

how the right idea is to come into the mind, no matter whether a predicate is sought for a subject or a subject for a predicate, since several particulars are in truth included under one universal.

The relation of reason and consequent possesses special importance for thought. It is always presented in the form of the syllogism, which in its simple form must always be correctly drawn, and may be proved by the law of contradiction. But now it is pretty evident that the syllogism does not bring out anything new whatsoever, as has been proved by John Stuart Mill and others, for the universal major premiss implicitly contains the special case in itself, which is only made explicit in the conclusion. But now as anybody can be convinced of the major as universal only by being convinced of all its applications, he must also be already convinced of the conclusion, or he is not convinced of the truth of the major premiss; and if the major has no certain but only probable validity, the conclusion also must have the same coefficient of probability as the major. It is hereby proved that syllogism in no way increases knowledge if once the premises are given, which is in perfect agreement with the circumstance that no rational human being thinks in syllogisms, but along with the thought of the premises has *eo ipso* already thought the conclusion at the same time, so that the syllogism never enters into consciousness as a special mode of thought. Accordingly, syllogism can have no immediate, but only a mediate significance for cognition. In truth, in all *particular* cases (where the *minor* is supplied) we are concerned with discovering the appropriate major; when this is found, the conclusion is at once in our consciousness—nay, even the major often remains an unconscious term of the process. Of course the same proposition can serve as minor for many majors, just as a subject may be supplied to many predicates; but just as, for the particular purpose of a judgment, only one predicate affords that deter-

mination of the subject which can serve to carry the train of thought forward to the desired goal, so also only one determinate major premiss can help to produce that conclusion which can advance this train of thought. The point then is, from among those universal propositions suspended in memory with which the given case may be combined as minor premiss, to summon just that one which is wanted into consciousness, *i.e.*, our general assertion is confirmed here too. *E.g.*, if I want to prove that the angles at the base of an isosceles triangle are equal to one another, I only need to remember the general proposition that in every triangle equal angles are opposite to equal sides; as soon as this has become clear to me and I remember it, the conclusion also is *eo ipso* there. As when somebody asks me what I think of the weather, and at the same time makes the remark that the barometer has considerably fallen, I only need to remember the general proposition that after every considerable fall of the barometer the weather changes, then I have my conclusion as a matter of course: "The weather will change to-morrow." Here, even beyond the shadow of a doubt, the universal major premiss will remain unconscious, and the conclusion appear as a matter of course.

If we ask, however, how (with the exception of mathematics) we come by the general major propositions, examination shows that it is by way of *induction*, in that from a larger or smaller number of perceived special cases the general rule is deduced with greater or less probability. This probability is really implicitly contained in the cognition of the major, and among people educated and accustomed to think, can be arrived at numerically by bargaining and higgling about the conditions of a wager proposed for the nearest special case. But of course one has usually only an *obscure* idea of the coefficient of probability, which consequently is anything but *exact*, so that, *e.g.*, a tolerably high probability *is constantly confused with certainty* (*vide* religious beliefs).

Nevertheless, by the proposal of a wager both upper and lower limits may very soon be found, by which the quantity of probability is always to a certain degree determined, and with acute minds these limits may be approximated to one another by continued examination of the conditions of the wager.

The question how one arrives at the belief in the general rule is divisible, then, into the two questions: (1.) how do we come to pass at all from the particular to the universal? and (2.) how do we obtain the coefficient which represents the probability of a real value of the general expression that has been found? The former is only explained by the *practical need* of general rules, without which man would be quite helpless, since he would not know whether the earth would sustain his next step, or the trunk of a tree the next time support him on the water. It must then be pronounced a happy *idea* produced by the urgency of *necessity*, for in the particular cases themselves there is nothing at all to lead to their comprehension into a general rule. The second, however, is explained by inductive logic, so far as one understands by induction the logical deduction of a coefficient of probability. It is true the objective connection is made evident by this, but the subjective process of consciousness does not know these artificial methods: the natural understanding instinctively induces, and finds the result as something pre-formed in consciousness, without being able to give any further account concerning the How. There remains then nothing for it but to admit, that the unconscious logical in man relieves the consciously logical of an office, which is requisite for the existence of mankind, and yet exceeds the power of the unscientific consciousness. For when I have often seen rain or storms occur, along with such and such signs in the sky, I form the general rule, with a degree of probability of real validity dependent on the number of observations, without knowing anything about Mill's inductive methods of Agreement,

Difference, Residues, or Concomitant Variations; and yet my result agrees with the scientific so far as the vagueness of my coefficient of probability can confirm an agreement, and if one takes account at the same time of the possibly influential positive sources of error, as interest, &c.

Hitherto we have always only taken note of tolerably simple processes of thought—its elements, as it were; there still remain, however, the cases where, in the midst of a conscious chain of thought, several logically necessary links are overleapt by consciousness, and yet almost invariably the correct result appears. Here, again, the Unconscious will manifest itself to us very clearly as intuition, intellectual vision, direct knowledge, immanent logic.

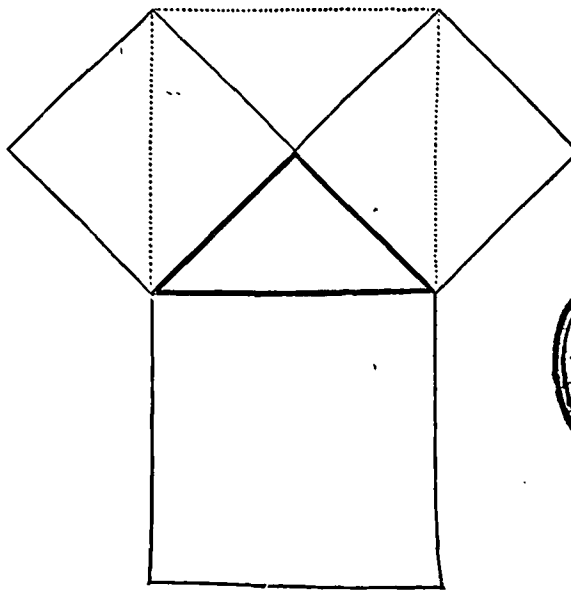
If we first regard mathematics in this light, it appears that two methods prevail in it, the deductive or discursive and the intuitive. The former mode of proof consists in gradual inferences, according to the law of contradiction, from admitted premises, thus answering in the main to the consciously logical and its discursive nature: it is usually taken to be the sole and exclusive method of mathematics, because it alone claims to be method and demonstration. The other method must renounce all claim to being a mode of argument, but is nevertheless a form of proof, therefore method, because it appeals to natural feeling, to sound common-sense, and by intellectual intuition teaches at a glance as much as, nay, even more than, the deductive method after a tedious demonstration. It comes before consciousness with its result, with the constraining force of logic, and that, too, without hesitation and reflection, but instantaneously, and has accordingly the character of the unconsciously logical. *E.g.*, nobody who looks at an equilateral triangle, if he has comprehended the question, will for a moment doubt whether the angles are equal. The deductive method can certainly prove it to him from still simpler premises, but the certainty of his intuitive knowledge will assuredly

not be increased thereby; on the contrary, if it is proved to him very neatly by calculation, and without perception of the figure, he will obtain less assurance than from simple intuition; he then merely learns that it *must* be so and cannot be otherwise, but here he sees that it *actually* is so, and still more, that it is necessarily so: he sees, as it were, as living organism from within, what appears to him by deduction merely as effect of a dead mechanism. He sees, so to speak, the "*how*" of the matter, not merely the "*that;*" in short, he feels much more satisfied.

It is Schopenhauer's merit to have rightly emphasised the value of this intuitive method, although he unduly slights the deductive method on that account. All the *axioms* of mathematics rest on this mode of proof, although, like more complex propositions, they may just as well be deduced from the law of contradiction; only, by reason of the simple nature of the subject, intuition acts here so strikingly in respect of conviction, that we almost regard the man as a fool who desires to deduce such principles. It accordingly happens that nobody has applied the necessary acuteness to really refer *all* the axioms of mathematics to the law of contradiction in application to given elements of space and number; hence the fixed idea of many philosophers (*e.g.*, Kant) that this reduction is not possible. But as surely as these axioms are logical, so surely is their deduction possible from the sole fundamental law of logic, the law of contradiction.

The axioms of mathematics are altogether useless for clear heads; these might commence the study of mathematics with axioms of a much more complex kind; but our mathematics is intended for schools, where even the stupidest must be taught, and these need to comprehend the axioms as logically necessary. The discursive or deductive method is adapted for everybody, because it proceeds step by step, but intuition is a matter of talent;

what the one sees at a glance is apprehended by the other only very circuitously. At a more advanced stage it is possible, by the reforming of geometrical figures, inversion, superposition, and other constructive aids, to assist intuition; but a point is soon reached where even a clear head can go no farther, and recourse must be had to the deductive method; *e.g.*, in the case of the isosceles right-angled triangle, the Pythagorean theorem may be



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made evident to the eye by folding over the square of the hypothenuse; but in the scalene it is only to be comprehended deductively.—It follows from this, that the intuitive faculty far too soon leaves our most accomplished mathematicians in the lurch for much progress to be made by its means. All depends upon the degree of the capacity; and there is nothing absurd in supposing a *higher mind* so completely master of the intuitive method that it can *altogether* dispense with the deductive. The difficulty of intuition is pre-eminently shown very soon in algebra and analysis; only prodigious talents, like

Dahse, are here capable of an intuition which is able to conceive and to deal with large numbers as a whole. More frequently one finds among mathematicians the ability, in an orderly chain of inference, to make intuitive leaps and to omit a number of terms, so that from the premises of the first argument immediately the conclusion of the ensuing third and fifth springs into consciousness. All this allows us to conclude that the discursive or deductive method is only the lame walking on stilts of conscious logic, whilst rational intuition is the Pegasus flight of the Unconscious, which carries in a moment from earth to heaven. The whole of mathematics appears from this point of view as the tools and implements of our poor mind, which, obliged laboriously to heap stone on stone, yet can never touch the heavens with its hand, although it build beyond the clouds. A mind standing in closer connection with the Unconscious, then, would instantaneously grasp the solution of every profound problem intuitively, and yet with logical necessity, as we do in the simplest geometrical problems; and it is accordingly not wonderful that the embodied calculations of the Unconscious, without trouble being given to it, agree with such mathematical precision in the greatest as in the smallest matter; as, *e.g.*, in the cell of the bee, the angle at which the planes are inclined to one another, however exactly it be measured (to half-angular minutes), agrees with the angle which, with the form of the cell, affords the minimum of surface, in this case of wax, for the given space (comp. also p. 190, on the construction of the femur).

In all this we cannot doubt that in intuition the same logical links are present in the Unconscious, only what follows serially in conscious logic is compressed into a *point* of time. That only the last term comes into consciousness is due to the circumstance that it alone possesses interest for us; but that all the others are present in the Unconscious may be perceived, if the intuition be intentionally repeated in such a way that only the one

before the last, then the term before that, &c., emerges into consciousness. The relation between the two kinds is then to be conceived as follows: The intuitive leaps the space to be traversed at a bound; the discursive takes several steps; the space measured is in both cases precisely the same, but the time required for the purpose is different. Each putting of the foot to the ground forms a point of rest, a station, consisting of cerebral vibrations which produce a conscious idea, and for that purpose need time (a quarter—two seconds). The leaping or stepping itself, on the other hand, is in both cases something momentary, timeless, because empirically falling into the Unconscious; the process proper is thus *always* unconscious, the difference is only whether, between the conscious stations for halting, greater or lesser tracts be traversed. In the case of small steps, even the heavy and clumsy thinker feels sure that he does not trip; with greater leaps, however, the danger of stumbling increases, and only the dexterous and nimble brain attempts them with advantage. The dull brain suffers a twofold loss of time with its greater discursiveness of thought. In the first place, the halt at each single station is greater in its case, because the single idea needs longer time to become conscious with the same clearness; and, in the second place, it must have more pauses. That, however, really the precise process is in every, even the smallest step of thought, intuitive and unconscious, on that point, after what has been said, scarcely any doubt can well remain.

But even outside of mathematics we can follow the interblending of the discursive and intuitive method. The practised chess-player possibly reviews in his mind the result *of this and that* move three or four moves ahead, but it does not at all occur to him to consider a hundred thousand other possible moves, five or six of which the bad chess-player perhaps considers, without lighting on the two which alone claim the attention of the proficient. How now does it come to pass that the latter does not at all take note

of these five or six moves, which would probably only be revealed as less good after two to three other moves had been made? He looks at the chessboard, and without reflection *he* immediately *sees* the only two good moves. This is the work of a moment, even if he be a passing spectator of a game played by others. In the same way the general of genius *sees* the point for the demonstration or the decisive attack, also without reflection (comp. above, p. 23, the reference to Heine). Practice is a word which here does not at all affect the question; practice can facilitate reflection, but never supply the want of it except in mechanical works, where another nerve-centre acts vicariously for the brain. But here, where we are dealing with something quite different, the question is, What instantaneously makes the appropriate choice if it is not conscious reflection? Manifestly the Unconscious.

Look at the antics of a young ape. Cuvier tells of a young Bhunder (*Macacus Rhesus*) (see Brehm's Illustr. Thierleben, i. 64): "After about the lapse of a fortnight it began to separate from its mother, and at once exhibited in its first steps an adroitness, a strength, which could not but excite universal astonishment, practice and experience both having been wanting. The young Bhunder from the very first clung to the perpendicular iron bars of its cage, and clambered up and down according to its fancy; perhaps made also a few steps on the straw; sprang of its own accord from the summit of its cage on to its four hands, and then again against the bars, to which it clung, with a velocity and accuracy which would have done honour to the most experienced monkey." How does this ape, just released from the skin of its mother, upon whose breast it has hitherto hung, come to measure aright the force and direction of its leaps? How does the lion, springing at the distance of twelve feet upon its prey, calculate the curve with the proper angle and velocity? How the dog the curve of the morsel which it catches so cleverly at any distance

and at any angle? Practice *only facilitates the action* of the Unconscious on the nerve-centres, and where these are already sufficiently prepared for their office without practice we see even this practice dispensed with, as in the above-mentioned ape; but that which is substituted for the lacking mathematical calculation can, as in the cell-structure of the bee, only be mathematical intuition combined with the instinct to execute the movement.

As concerns the overleaping of conclusions in ordinary thought, this is a very well-known experience. Without this acceleration thought would be of such a snail's-pace that, as now frequently happens in the case of human beings with sluggish brains, in many practical reflections one would arrive too late with one's result, and would hate the whole labour of thought on account of its cumbrousness, as it is now hated and avoided merely by specially lazy thinkers. The simplest case of skipping is when the conclusion is immediately drawn from the minor premiss without our being conscious of the major premiss; but also one or several actual conclusions are sometimes omitted, as we have already seen in mathematics. This commonly happens only in one's own thinking; in communication we have regard to the understanding of others, and recover the principal intermediate links that have previously remained unknown. Women and the uneducated frequently neglect this, and then there arise those leaps in their trains of thought which may be convincing to the speaker, although the hearer is wholly unable to see how he is to get from point to point. Any one accustomed to introspection will be able to catch himself making considerable leaps in carrying on a train of thought and in drawing inferences, if he make this review directly after prosecuting a new and very interesting study with zeal and success.

An observation of Jessen, the well-known student of mental disease, on an allied topic, is interesting ("Psychology," pp. 235, 236), which I will take the liberty of

quoting:—"When we reflect on anything with the whole force of our mind, we may fall into a state of entire unconsciousness, in which we not only forget the outer world, but also *know nothing at all of ourselves and the thoughts passing within us.* After a shorter or longer time, we then *suddenly* awake as from a dream, and usually *at the same moment the result of our meditation appears clearly and distinctly in consciousness, without our knowing how we have reached it.* Also, in a less severe meditation, there occur moments in which a perfect vacancy of thought is combined with the consciousness of our own mental effort, to which in the next moment a more vivid stream of thought succeeds. Certainly some practice is required to combine serious reflection with simultaneous self-observation, as the endeavour to observe thoughts in their origin and their succession may easily produce disturbances of thinking and arrest the evolution of our thoughts. Repeated attempts, however, put us in a position clearly to perceive that in fact in every arduous reflection a constant inner pulsation, or a changing ebb and flow of thoughts, as it were, takes place—a moment in which all thoughts disappear from consciousness, and only the consciousness of an inner mental strain remains, and a moment in which the thoughts stream in in greater fulness and distinctly emerge into consciousness. The lower the ebb, the stronger the succeeding flood is wont to be; the stronger the previous inner tension, the stronger and livelier the contents of the emerging thoughts." The purely empirical observations of this fine mental observer are a confirmation of our way of regarding the matter, the more above suspicion as he is not at all acquainted with our conception of unconscious thinking, and nevertheless is constrained to the verbal acknowledgment of our assertions (in the passages in italics) by the pure force of facts; although his subsequent attempts at explanation, which are in essentials (brainless thinking)

quite correct, do not hit the nail on the head, just because they do not grasp the notion of the Unconscious as principle of thought apart from a brain. The consciousness of mental effort observed in these processes is only the feeling of the tension of the brain and the scalp (by reflex action). The moments of vacancy of consciousness that are described, on which the result follows *without our being aware how it has been arrived at*, are those very moments when, in the productive thinking out of a zealously pursued object of study, the skipping of a longer train of inferences takes place.

Truly man is so accustomed to find in his consciousness results of which he is quite ignorant how he has come by them, that in any particular case he is not wont to wonder at it in the least; and therefore it is also natural that an inquirer should not first reach the notion of the Unconscious from this starting-point. But as in general the reaction of the Unconscious is wont most frequently to fail when one intentionally seeks to stimulate it, so in the eager and intentional reflection on a subject this effective entrance of the Unconscious might be less easy to establish to the satisfaction of the majority, than in the so-called mental digestion and assimilation of the received nutriment, which does not occur on a conscious impulse, but at an indeterminate time, and is only announced by the results, which opportunely occur without our having been consciously occupied with the affair. (Schopenhauer calls this "unconscious rumination," comp. above, p. 29.) Thus it regularly happens with me when I have read a work which presents new points of view essentially opposed to my previous opinions. The proofs of such ingenious ideas are often rather weak; and even if they are good and apparently irrefutable, still no human being can be so rapidly converted from his old opinions, for he can advance just as good grounds for the latter, or, if he cannot do so himself, he confides in himself and not the new author and thinks: counter-proofs will be

found, although I am not at present acquainted with them. Then there intervene other occupations; the matter is not sufficiently important to hunt for counter-arguments, for which search must be made in books, often for weeks, nay, months; in short, the first impression gets weak, and the whole affair is in time forgotten. Sometimes, however, it is different. If the new ideas have made a really deep impression, they may be referred provisionally, unaccepted, as undecided questions, to the court of memory, may even be obstructed by other occupations, or, still better, intentionally laid on one side, in order to be thought of again. Nevertheless the matter is only apparently laid to rest, and after days, weeks, or months, when the wish and opportunity arise to give an opinion on the question, we find to our very great astonishment that we have undergone a mental regeneration on the point, that the old opinions which we had taken for actual conviction up to that moment have been entirely renounced, and that new ones have already become quietly lodged there. This unconscious mental process of digestion and assimilation I have several times experienced in my own case, and have always had a certain instinct not to disturb this process prematurely by conscious reflection in real questions of principle affecting the general view of the world and of the mind.

I am of opinion that even in more unimportant questions, as soon as they only awaken interest with sufficient vividness, thus in all concerns of practical life, the process described always affords the right and true decision, and that the conscious reasons will only be subsequently right when the judgment has been already formed. The ordinary understanding, however, which does not pay attention to these processes, really imagines that it is swayed in its opinion by the reasons which have been sought for, whilst an acuter self-observation would teach it that these only come in the cases alluded to when its view is already fixed, its resolution taken. In saying this, it is by no

means asserted that the Unconscious is not determined by logical reasons. This is most undoubtedly the case; it is only tolerably indifferent so far as concerns the certainty of the decision, at any rate at first, whether the reasons afterwards sought for by consciousness agree with those reasons which have determined the Unconscious or not! In the case of acutely thinking brains the former, with the great majority the latter, will be prevailingly the case, and accordingly the phenomenon is explained, that people often seem to derive such firm conviction from such bad reasons, and allow themselves to be dispossessed of it with much difficulty by the best counter-arguments. It lies just in this, that the true unconscious reasons are not at all known to them, and therefore are not to be refuted. It is here indifferent whether their conviction contains truth or not; also of errors (which as said never arise from false conclusions, but from the insufficiency and falsehood of the premisses), those are most difficult to eradicate which are the result of an unconscious process of thought (*e.g.*, in political opinion those which are unconsciously rooted in professional and class interests).

If now, however, any one should be led by these considerations to lightly estimate conscious ratiocination, such an one would fall into serious error. Just because, in conclusions attained at a bound, errors easily slip in, it is imperatively necessary in important questions to render the individual terms clear by discursive thought, and to descend by such small stages of thought that one may be as far as possible protected from errors in the conclusion. Just because in the opinions, whose true proof lies in the Unconscious, the perversion of the judgment by interests and inclinations is withdrawn from all control and has such free scope, it is doubly necessary to draw the subjective proof to the light, and to confront it with the results of discursive logical inferences, since only in the latter is there to be found a certain, if also always a very defective, guarantee of objectivity. If the subjective prejudices

be stronger for the moment, conscious logic gains ground with time, if not in one, yet in the course of many generations. But even in this emergence of certain truths to the light of consciousness, and in their struggle and victory over dominant ideas of the time, there rules again, as we shall see hereafter, an unconscious logic, a historical providence, which has never been perceived more clearly than by Hegel.

VIII.

THE UNCONSCIOUS IN THE ORIGIN OF SENSE-PERCEPTION.

KANT in his "Transcendental Æsthetic" maintained that Space was not passively received by the mind, but spontaneously produced by it,—hereby causing an entire philosophical revolution. But now, why has this correct statement been at all times so stoutly opposed by common sense, as well as, with few exceptions, by the scientific mind?

1. Because Kant, and after him Fichte and Schopenhauer, drew from a true proposition subjective-idealistic consequences, which were false and repugnant to the instinct of the healthy reason.

2. Because Kant had given faulty proofs of his correct assertion; which in truth proved nothing at all.

3. Because Kant, *without giving any further account of it*, speaks of an *unconscious* process in the mind, whilst the previous mode of treatment only knew and regarded as possible conscious mental processes, but consciousness denies a spontaneous production of Space and Time, and with perfect truth insists upon their being given in sense-perception as *faits accomplis*.

4. Because Kant put Time, of which this proposition does not hold good, on a level with Space.

These four points we have successively to consider, since the unconscious production of Space is the indispensable foundation of sensuous perception, with which consciousness takes its rise and which in its turn is the foundation of all conscious thought.

Ad. I. In the first place, assuming it be proved that Space and Time can in no other way find an entrance to thought than by the spontaneous activity of the latter, it by no means follows from this that Space and Time can have real existence *exclusively* in thought, and not also outside thought in the real world. The overhasty nature of this conclusion, which Kant actually draws, and through which he comes to the denial of the transcendental reality of space and to the one-sided ideality of his system, has been shown by Schelling ("Exposition of the Process of Nature," Werke, i. 10, 314–321) and Trendelenburg ("On a Gap in Kant's Proof of the Exclusive Subjectivity of Space and Time," in the third volume of the "Historical Contributions," No. vii.) It is more fully discussed in my essay, "The Thing in Itself and its Constitution" (Berlin: C. Duncker, 1871), particularly in the last two sections: vii. "Space and Time as Forms of the Thing in Itself;" and viii. "Critique of the Transcendental Æsthetic." Here, however, we can only consider with all brevity the reasons which render it probable that Space and Time are just as much forms of existence as of thought.

(*a.*) We have first to give a clear statement of the reasons for believing in the real existence of a Non-Ego, or an external world lying beyond the Ego. Only two hypotheses are logically possible. Either the Ego unconsciously fashions the world of appearance from its own essence, in which case the Ego alone really exists, and *per consequentiam* every reader must deny the existence not only of external things but of all other men; or there exists a Non-Ego independent of the Ego, and the representation of the external world in the Ego is the product of these two factors. Which of these hypotheses is the more probable must be decided by this; which more easily explains the phenomenal world? either is conceivable.

(*a.*) Sense-impressions have a degree of vividness which

pure ideas produced by our own mental activity are wont only to attain in morbid states. Moreover, they often (especially in the years of childhood) bring real additions to the stock of knowledge, whereas the class to which they are opposed is always made up of familiar memories and portions of the same. This is easily explained by the assumption of an external world, hardly from the Ego alone.

(β.) For the origination of a sense-impression the feeling of the open sense is requisite; on the other hand, the feeling of the open sense does not necessarily produce a sense-impression, *e.g.*, in darkness, anosmia. This is easily explained by the influence of an external world, hardly from the Ego alone.

(γ.) Sensuous representations arise according to the law of the succession of thought from antecedent representations in accordance with the particular mood, &c.—Sensuous impressions for the most part appear suddenly and unexpectedly, and always disconnected with the internal train of thoughts. This phenomenon is only possible without action of an external world if the law of mental succession holds good at one time and not at another, strictly explicable it is not even on this assumption from the Ego alone.

(δ.) Most impressions have this peculiarity, that their assumed object is also simultaneously inferred from another impression of another sense (*e.g.*, a dish of food may be simultaneously seen, smelt, tasted, touched). This is easily explained by the action of an external world, hardly by mere internal mental processes. For if one should assume that the co-existent sense-impressions mutually arouse one another, *e.g.*, the visual impression of a dish of food brings with it the odorous impressions, the olfactory sense being open, he would be refuted by the fact that the sense of smell and sight may be alternately opened and closed, and yet each time receive the appropriate sense-impression of the food. Should any one in reply to this

make the further assumption, that not merely the simultaneous, but also the antecedent visual impression of the viands have power to produce the odorous impression of the same and conversely, he would be met by the circumstance that on the alternate opening and closing of the two senses, the visual impression can be had at one time but not at another, namely, when the viands are removed, so that the odorous impression under otherwise similar circumstances would call forth the visual impression at one time but not at another, which contradicts the principle, "Like causes, like effects." (See further Wiener, "Grundzüge der Weltordnung," Band 3, under "Proof of the Reality of the External World.")

(ε.) Things, *i.e.*, the causes of the impressions of sense, act on one another according to laws strictly definite. Now, if the impressions of sense are to be explained from the Ego alone, these laws must be transferable to the inner mental processes. But this is not so; for only in the rarest cases do the sense-impressions of cause and effect follow one another as cause and effect in the outward world. Often, on the contrary, the effect is perceived at one time and the cause at another and later time; but a later sense-impression cannot be the cause of an earlier one.

(ζ.) Every Ego, besides the idea of its own body, receives also ideas of a great number of extraneous bodies similar to its own, in which reside mental faculties similar to its own. It finds that all these existences announce the same representations concerning Ego and Non-Ego, and that their declarations concerning the constitution of the external world partly agree with one another in a surprising manner, partly check one another, and lead to the conviction of error. Each Ego sees these existences born, grow, die like itself; it receives from them protection, help, and instruction during the age of childhood, when its own force and knowledge is insufficient; and receives at every period of its life, directly or in-

directly (through books) instruction from others, in which thoughts occur which it is compelled to confess itself unable to grasp. It learns by the aid of teachers to follow backwards the succession of its fellow-beings, and to perceive a plan in history in which it is obliged to look upon itself as a link. All this is almost impossible with the sole existence of the Ego, but easily to be explained by the existence of one external world common to all Ego's, which includes within it the bodies of these reciprocally acting Ego's. As other Ego's can only act on me through their bodies, every inference to the transcendent reality of other Ego's is *illegitimate* if it is not mediated by the inference to the transcendent reality of my own and other bodies, and founded thereon.

(η.) The internal ideas can be called forth, retained, and repeated at pleasure by the conscious will, the impressions of sense—the sense-organ being open—are entirely independent of the conscious will. This is easily to be explained by the action of an external world, hardly from the Ego alone. An unconscious will would in that case have to produce things, and then mirror to the consciousness of the solitary Ego the semblance of an external world—a piece of juggling in which there would be no rhyme or reason at all, and, as the preceding paragraphs prove, the wildest whim and caprice would have to be united with the strictest regularity in an incomprehensible fashion, and the highest wisdom would be wasted on a bubble, a lunatic dream.

One sees from what has been adduced that the probability of the existence of a Non-Ego existing independently over against the Ego, and causally influencing the Ego, is as great as it could possibly be, and that here again natural instinct is justified by scientific reflection. From this necessity of having an external transcendent causality for the origination of sense-impressions even Kant and Fichte could not free themselves, although they deny it in words; for, with Kant, the *content of*

intuition is absolutely given; and although he thereby contradicts his own doctrine of the merely immanent import of Causality, he yet says repeatedly and expressly that that *whereby* this content is given is the thing in itself (comp. "The Thing in Itself," sect iv., "The Transcendent Cause," and v. "Transcendent and Immanent Causality"). Fichte, again, after all his unsuccessful attempts to weave the Non-Ego entirely from the Ego, cannot do without an *external impulse* for this activity of the Ego, and this impulse stands with Fichte for the true Non-Ego. Berkeley, too, suggests a transcendent cause for every perception, referring everything, however (overleaping the world of things in themselves), without distinction, directly to the Absolute, *i.e.*, foregoes the attempt to explain our perceptions, and every attempt to penetrate the mystery of the real connections of their special originating causes.

If it is now established that even the most consistent Idealists have not had the courage to be consistent to the extent of denying an independent Non-Ego, if the feeling is not to be got rid of that perception, on the whole, is something thrust upon one from without in opposition to one's own will, it results with the same certainty, from what has been stated, that the *distinctions also in sensuous perceptions* are not produced by the Ego, but are *thrust upon it* by the Non-Ego. For insight would not at all be enlarged if the Non-Ego were always one and the same, and consequently always acted in one and the same way, supplying merely an external shock. For then it would again be left to the Ego, in strange caprice to suspend on the ever-identical impulse of the Non-Ego now this, now that spatial or temporal determination or category of thought as an indifferent cloak, and in this way itself to construct the whole *How* and *What* of the external world, the impulse only guaranteeing the *That*. In this all the before-mentioned difficulties repeat themselves unchanged. Thus even Schopenhauer lets the distinctions in the intuitions of the world of representation

be altogether conditioned by corresponding modifications in the essential will of the things-in-themselves, which through them become representable in thought (Parerga, § 103 b). By this, however, he, in fact, again leaves room for the transcendent causality which he has expressly rejected in words, for how are the things-in-themselves of this horse or this rose to set about determining my representations of either according to the modifications of their nature, unless by a transcendent causality, which is immediately manifested as definite affection of my sense-organs?

Every *single determination* in perception must then be conceived as effect of the Non-Ego; and as different effects presuppose different causes, we obtain a system of as many differences in the Non-Ego as there exist distinctions in perception. Now, certainly these differences in the Non-Ego might be of a non-spatial and non-temporal character, and Space and Time forms belonging to thought alone; but then these differences must have place in the other objective forms, which would have to run parallel to the objective forms of Space and Time, since, without other forms of being replacing Space and Time in the Non-Ego, no corresponding difference could have place therein. This assumption of other but corresponding forms in the Non-Ego, which seems to have hovered before Reinhold and afterwards Herbart in their intelligible Space and Time, would, quite apart from the fact that it excludes the possibility of any objective knowledge of things, contradict, without offering any equivalent advantage, the generally observed law that Nature always chooses the simplest means to its ends. Why should it make use of four forms when it could get along quite as well and even better with two? The parallelism of these pairs of forms in Existence and Thought, and their reciprocity, which, in fact, exists in perception and action, would require a pre-established harmony, which, on our assumption, would resolve itself into the identity of the forms.

Hegel likewise says (Larger Logic, Introd., p. 8): "If they (the forms of the Understanding) cannot be determinations of the thing-in-itself, still less can they be determinations of the Understanding, to which at least the dignity of a thing-in-itself should be assigned."

(*b.*) Mathematics is the science of the presentations of Space and Time, as our thought forms, and cannot otherwise form them. Now, if we measure a real triangle, given not by thought, but by successive perceptions which may be too great for simultaneous intuition, and find in all similar attempts at measurement the same law confirmed which pure thought gave us, that the sum of the angles $= 2.R$; further, if we take note that the determinations of the perception are something necessarily imposed on the mind by the system of differences in the Non-Ego, thus have their causes in differences of the Non-Ego, it follows from the empirical confirmation of the mathematical laws, to which there is no exception, that the distinctions in the Non-Ego obey laws which certainly must correspond to the forms of the latter, but run so entirely parallel with the rational laws of Space and Time, that here again the assumption of a pre-established harmony is unavoidable, whilst an identity of the laws agreeing with the identity of the forms requires no such forced assumption.

(*c.*) The senses of Sight and Touch receive their impressions from qualities of body altogether different, by quite distinct media and quite different physiological processes; nevertheless we obtain from them spatial perceptions which exhibit as great an agreement as possible, and which confirm one another. Now, were the objects not themselves in Space, but existed in any other form of being, it would be in the highest degree wonderful that they should produce in the mind in such different ways such congruent spatial figures; thus, *e.g.*, the seen ball never appears as felt die or anything else, but as felt ball. On the assumption of Space as real form of existence this puzzle vanishes.

(*d.*) Only sight and touch, but none of the other senses, are able to arouse in the mind the perception of Space. (For when we hear where a sound comes from, the comparison of the strength of the sound in the two ears is chiefly relied upon; comp. p. 337.) Kant entirely overlooked this, otherwise he could not have set up his division of outer (Space-sense) and inner (Time-) sense. To subjective idealism this whim of the mind is absolutely incomprehensible, which nevertheless occurs with the appearance of external necessity; but it is just as incomprehensible if other corresponding forms are assigned to existence. Only the physiological consideration of the local construction of the different sense-organs can here afford a ready explanation; but if the body and the senses do not exist in Space, here, too, all possibility of comprehension is precluded.

These four considerations taken together render it highly probable that common sense is right in believing that Space and Time are just as much objective forms of existence as subjective forms of thought. This *formal* identity of thought and being is almost self-evident for one who assumes their essential identity (comp. C. Chap. xiv.)

Ad. II. As we do not intend to *dispute* but *to assume* the assertion of Kant placed at the head of this chapter, there is no reason to show here why the Kantian proof is *no proof*, and leaves the question quite open (comp. "The Thing in Itself," viii. "Kritik der Transcendentalen Æsthetik"). We shall, however, offer other reasons in lieu thereof.

A naïve theory of immediate perception regarded the sense-impressions as images of the things, which perfectly correspond to them, as the reflected image to its object. When Locke and modern physical science had made the complete heterogeneity of the sensation and the quality of the object the common property of science, the *retinal image* which was perceived in *the eyes of other beings* was substituted for the thing, and the sensation in its content

was now said to be identical with the retinal image as formerly with the thing,—a view which is still a common one. It was, however, thereby forgotten that it is something quite different to perceive an objective image *within the extent of an eye* in the eye of another *with one's own eyes*, or even to have the visual sensation determinable only according to *angular degrees without absolute superficial magnitude*. It was forgotten that the mind does not sit as a second eye *behind* the retina and look at this image; it was not seen that one committed *the same* fault as before in the case of things, only in a *more disguised fashion;* for what appears to another eye as a retinal *image is in this eye itself nothing but vibrating molecules*, just as well as that which in things appears to the beholder as colour, brightness, &c., are in the objects only molecular vibrations. People accordingly allowed themselves to be duped by the pleasure of having discovered a *camera obscura* in the eye, and considered the former problem to be solved, whereas it had only been shelved for an external question. The physiology of the eye has since discovered that the eye is not a camera to exhibit diminutive images to the mind on the retinal ground, but a photographic apparatus, which so changes the molecular vibrations of the retina chemically-dynamically, that modes of vibration which have hardly any resemblance to the light vibrations in the ether are handed on to the optic nerve to be propagated farther, so that those modifications of light, *e.g.*, which are felt as colour, are in the nerve combinations of variously strong functions of three different kinds of end-organs in the retina, whilst the corresponding modifications of the physical ray of light are only discriminated by the wave-lengths of the vibrations. Further, light has a velocity of about 200,000 miles in a second, the process in the optic nerve only one of about a hundred feet.

Thus much is established, that the qualitative conversion of light vibrations on their entrance into the retina is of the greatest importance, and would give the final

death-blow to the view which assigns an importance to the image on the retina accidentally observable by other eyes, if the idea were not in itself absurd, that the optic nerve, like a second eye, looks at this image—and then? But perhaps the central organ of vision (the corpora quadrigemina), as a third eye, looks at the image of the optic nerve, and then the central organ of thought (the cerebral hemispheres), as fourth eye, the image of the corpora quadrigemina, and then, perhaps, a definite central cell or the cerebral centre of consciousness as fifth eye, the image of the cerebrum, not to push the matter directly to the sixth eye of a punctual central monad having its seat at some place or other in the brain! For this much is to be looked upon as physiologically established, that the *sensation* of sight can *at the earliest* take place in the central part into which the optic nerve runs in the corpora quadrigemina, but not in the course of the optic nerve itself. On the entrance of the nerve into the centre, however, we must assume another conversion of the modes of vibration, on account of the altered structure of the nervous matter, and because the importance of the central parts for perception would cease if the form of vibration remained unchanged, because then the sense must react with sensation on the vibrations of the optic nerve. In the corpora quadrigemina again, however, those extended *thought*-processes, in which the space-intuition is always found as an integral element, cannot take place. As such have their seat in the cerebral hemispheres, so also the visual sensations, which underlie the space-intuition, just as the sensations of touch, which again are developed at another spot in the brain, must be first conducted to the cerebrum, in order there, by help of thought, to acquire the extension of the space-intuition.

If, now, the object-image on the retina can be compared with a mosaic, which resembles the thing itself in its proportions, yet the isolated primitive nerve-fibres are far too much interlaced for an ideal section of the optic nerve

on its entrance into the corpora quadrigemina to exhibit an order and position of the fibres corresponding to the retinal image; and even worse founded would be the assumption that in the central organ itself there occurs such a localised affection of cells, that between it and the retinal image a like proportionality of extensive relations obtains as between retinal affection and thing. But since these affected cells in the central organ itself would even then be still relatively dependent, and would communicate with one another only by fixed paths, even on such an unjustified assumption, it would still not be clear how the consciousness resulting as aggregate phenomenon from the plural cell-consciousness could come to order sensations in an extension, which should correspond to the relative positions of the affected cells. There is no bridge between the real spatial position of the material parts which produce sensations and the ideal spatial position of the conscious sensations ordered in extensive intuition; for space as real form of existence and space as conscious ideal form of intuition are as incommensurable as the real and the imaginary part of a complex number, although both are *in themselves* subject to the same formal laws. This is also the reason why even the physiologically untenable theories of a single ultimate central cell (how soon must it get fatigued!) or of a punctual central monad are altogether incapable of forming this bridge. If real and conscious ideal space are heterogeneous spheres, of which the one can have no part in the other, real space-relations of the sensation-forming material parts cannot have any influence on sensation at all; the *position* of the sensitive parts of the brain is *indifferent*, and only the mode of vibration, dependent partly on the nature of the central parts, partly on the intensity and quality of the conveyed motion, can influence the character of the resulting intuition.

This law, which must be self-evident *a priori* to every philosopher, for the rest, has already been formulated

on the physiological side, and can hardly be seriously impugned. Lotze thus expresses it:—*Identical vibrations of different central molecules call forth undistinguishable sensations*, so that several simultaneously vibrating molecules of identical form of vibration produce a sensation, which *qualitatively* resembles the sensation excited by any one of these molecules, but *quantitatively* possesses the degree of strength of the *sum* of all the single sensations. If a person smells with one nostril, he has the same sensation, only more faintly, as if he smelt with two; and if the tactile nerves of the nose did not feel the stream of permeating air, the olfactory nerve alone would not in the normal state perceive the smell of the left and right nostril as different. The like holds good of taste, if it affects a smaller or larger part of the tongue and palate; only the simultaneous tactile feelings of contact, of the contraction of the skin, &c., distinguish the place touched; the taste itself becomes only stronger or weaker. Whether a sound reaches the left or right ear is only perceived by the feelings of tension excited simultaneously in the ear, partly directly, partly reflectorially. Here, too, it is not at all the auditory nerve, but tactile nerves, especially in the richly-supplied tympanum, which condition the feeling of localisation, as clearly follows from Ed. Weber's diving experiments, which prove that this local feeling remains only so long as the auditory passages are filled with air, but is lost if the tympana are rendered inactive by the filling of the auditory passages with water. In vision we receive different impressions from the same point of light, it is true, if its image falls on differently situated places of one or both eyes; but the impressions are not to be distinguished when they fall on corresponding parts of both eyes. In a well-contrived arrangement of the experiment one is not at all aware whether one sees a light with the right or with the left, or with both eyes at once, if information on the point cannot be obtained by other expedients. The visual impressions of

corresponding points of the two eyes are combined into a single strengthened impression.

According to Lotze's theory we should not be able to distinguish whether a pain, feeling, touch, &c., affects the right or left half of the body, unless, owing to the want of symmetry, even in the smallest particular, of the two halves of the body, the accompanying sensations of tension, extension, pressure, &c., were not the same on the right half of the body as on the left, so that by this qualitative incongruence of the sensations, with the help of practice, we are enabled to distinguish right and left in our own body. In hearing, taste, and smell, also, as already mentioned, such attendant circumstances are present, making possible a certain discrimination of congruent sensations, according to the place acted on; but it is important, that here the nerve-trunks which mediate the specific sensation and those which report the accompanying differences are different, whence it follows, that if, by cutting off the latter, or by other well-contrived elimination of the accompanying differences, the pure sense-perceptions are excluded from the experiment, these are no longer able to afford the consciousness of local differences, and are thus altogether *unable to produce space-intuitions.* Otherwise is it with the senses of Touch and Sight. Every similar sensation of Touch at various parts of the skin is combined with characteristic accompanying differences, which are founded on the particular displacement, tension, extension, and participation of juxtaposed and underlying sensitive parts, when pressure is exerted on the skin, according to the softness or hardness, the special form of the limb, nature of the subjacent parts, thickness of the sensitive tactile corpuscles, &c., and which are almost all conducted to the brain through the same nerve-trunks. In the same way a similar sensation of colour or light is associated with characteristic differences, according to the point of the retina that is affected, which are founded: (1) on the decreasing distinctness of

the perception of similar impressions from the centre to the periphery; (2) on the currents induced in the neighbouring fibres, which again have a different issue, according to the position of the latter with respect to the point of the clearest vision; (3) on the reflex motor impulse to rotate the eye-ball, which upon every affection of a spot in the retina has for its consequence that the point of most distinct vision strives to occupy the place of the affected retinal point.

These three moments in conjunction give a different stamp to the similar sensations of every retinal fibre, to which Lotze, the author of this theory, gives the name of *local sign*. These differences also are partly conducted to the brain by the optic nerve, partly felt in the brain itself through the resistance, which the will must oppose to the reflex tendency to rotate the eye, in order to prevent it. It is now comprehensible how, in contrast to the sensations of smell, taste, and hearing, precisely the *sensations of sight and touch* can suggest to the mind the *intuition of space*, to wit, because with these the stimulus conveyed by every single primitive nerve-fibre *has its qualitative definiteness through a well-organised system of accompanying differences*, so that the vibrations excited in different nerve-fibres by similar external stimuli so far turn out different, that they can *not* blend in the mind *into a single* strengthened sensation, but yet so far resemble each other that the qualitatively similar portion can easily be perceived by the mind in the sensations produced through them. According to this we can only find the general law confirmed by the apparent exceptions, that identical vibrations of different parts of the brain blend into one sensation strengthened in degree; a law which both appears highly plausible *a priori*, and also empirically has not only no fact against it, but without it the phenomena of the lower senses already mentioned would be simply inexplicable. According to this law the vibrating molecule is perfectly indifferent to the mind, its *mode* of vibration alone

has an influence on the mind; and when we see certain parts of the body (the nerves), certain parts of the nervous system (the grey matter), certain parts of the brain especially appropriated to higher influences of a definite kind, we can only ascribe this to the circumstance that these parts are adapted, by reason of their molecular constitution, either exclusively or chiefly, to the production of that kind of vibrations, which alone or chiefly are capable of exerting these influences on the mind.

If we now look upon this law as established, and Lotze's theory of local signs (apart from the question whether those especially employed by him are exactly the right ones) as assured, we still do not get beyond the result, that, in sight or touch the mind receives from every primitive nerve-fibre, through the intervention of the brain, a special sensation, which is prevented by its individual character from blending with others, but yet is so like the others that it is an easy thing for the mind to perceive as such the similar foundation which they all possess. But we in no way get from this sum of *simultaneous qualitatively similar and yet different sensations* to their *distribution in space*, as presented in the field of vision and the cutaneous field of touch; we always stop short at the *qualitative* and *intensive quantitative* or *graduated* distinctions of the several sensations, and can in no way see how it is possible for the extensively quantitative or locally extended to be imported into sensation from the vibrations of the brain molecules, since it is not the position of the single molecule in the brain, but only the duration, form, &c., of its vibrations which has influence on sensation, and these moments do not contain the elements of extensive quantity, which might stand in some relation or other to the extensive quantity of the retinal image. On the other hand, in virtue of the system of local signs, the extensive proximity and distance of the points of the retinal image from one another, or their actual contact, is

changed into greater or less qualitative differences of the corresponding sensations, or least difference; and, accordingly, a material is presented to the mind, which, if the latter spontaneously reconverts this system of qualitative differences into a system of local relations, now compels the mind with necessity to assign such a place to every sensation in the space-image as corresponds to its qualitative determinateness; so that there is no room for caprice in regard to the space-determinations of a figure given by a sum of qualitatively distinct elements of sensation, but the mind is necessarily compelled to reconstruct the same in the relations in which the image on the retina appears to the eye of an onlooker, in conformity with experience.

Wundt expresses the thoughts just presented as follows:—"The union offered by *colligation*" (aggregation, comprehension) "is a purely external one, in which the united sensations are *preserved as individual sensations.* But the *synthesis, in blending* these intimately united sensations by the preparatory process of colligation, produces a *third* element, which was *not yet* contained in the individual sensations as such. Synthesis is, therefore, the strictly *constructive* element in perception; it educes from the unrelated existing sensations something *new*, which undoubtedly *contains in itself* the sensations" (but now no longer like the mere colligation *as* connected *individual sensations*), "but yet is something quite *distinct* from the sensations." ("Beitr. z. Theorie d. Sinneswahr.," p. 443.) These generally valid propositions he makes more precise on the following page, in reference to the synthesis occurring in the formation of the spatial visual perception:—"Thus the synthesis in perception is *a creative activity*, in that it *constructs* space, but this creative activity is by no means a *free* one; but the impressions and the outer impulses co-operating in the synthesis necessarily *compel space to be reconstructed with complete fidelity.*"

That school of empiristic physiology, which endeavours

to represent as indispensable a construction (or, with reference to the retinal image, reconstruction) of space consequent on the given sense-impressions by a creative synthetic function of the mind, chiefly employs the artifice of evoking the visual space-perception by help of the sense of touch, and the tactile space-perception by help of the sense of sight. Now, it is doubtless correct, that both senses, in the finer elaboration of their space-perceptions, essentially support one another; still, it would be impossible that both together should create space, unless it were already concealed in each singly. Thus, experience shows that persons born blind can acquire and elaborate, even more finely than seeing persons, the space-perceptions of the sense of touch without help of vision, and that, on the other side, persons born blind who have been operated on, on obtaining their sight, before any attempt to bring the new visual perceptions into relation with the tactile perceptions familiar to them, apprehend at once the visual space of at least two dimensions.—In the next place, the opponents of the creative production of space attempt the same sophism within each of the two senses, in the relations between the field of sight *at rest* (or field of touch) on the one side, and the feelings *of movement* of the eyeball (or the tactile members) on the other. But now it is also here at once clear that, if either the quiescent field of vision or of touch, or the feeling of muscular movement, does not possess extension, no combination, however ingenious, of these non-spatial sensations can originate space-extension without the addition of a creative constructive synthesis. Even here, these "empirics" have empiricism against them; for although, in reference to the sense of touch, the experimental separation of tactile sensation and motor feeling has not yet been accomplished, yet the fact is established, that in persons born blind, who have been operated upon, the superficial extension of the visual impressions is given from

the first moment of seeing, and is by no means only gradually acquired by numerous attempts at combining the sensations of the optic nerve with the feelings of movement of the eyeball. But even supposing that it were true, that the union of passive sensation and feeling of movement offered sufficient material to the mind (in local signs) for the space-construction, yet, even then, a creative synthesis would still be required, because sensations with differences merely qualitative and intensive could never attain without it to an indivisible extensive perception. But as the feeling, excited by the vibrating molecules of the brain, can only be discriminated qualitatively and intensively (comp. p. 339), and in no case can any relations whatsoever exist between the space of their position or movement and the space of the image of perception (comp. 335, 336), the creative synthetic function must be a purely spiritual function of the Unconscious.

We may therefore say, in direct opposition to Schopenhauer, that the sole ground for the assumption of the a-priority of the space-intuition is the impossibility of conceiving the same to have arisen by mere brain-function. If Schopenhauer were right, that space, as a form of intuition, is merely a predisposition in the organisation of the brain, which reacts on the stimulus of visual or tactile sensations in the manner peculiar to it, this cerebral predisposition might be explained according to the biological theory of descent by a transmission confirmed and perfected from generation to generation, only the genesis of the space-intuition in the lowest animals and vegetable animals (a far greater marvel than the same phenomenon in human consciousness), and the gradual expansion of this original germ being left to the direct action of the Unconscious. A predisposition for the more many-sided and finer development of the space-producing sensation, augmented by transmission, I, too, assume in the brain; but this only concerns the material

which excites the unconscious mind to the position of space, and determines the *How* of the space-intuition in the individual—in no case can it relieve the mind of the spontaneous act of giving a space-extension to the qualitatively ordered material, *i.e.*, the spontaneous reconstruction of space, but only *facilitate* it and *enrich its content.* We have now got to understand, I think, how it happens that only the visual and tactile senses, but not the other senses, can evoke the space-intuition; we have also comprehended the causal connection, whereby the mind is compelled to reconstruct just those space-relations which correspond to the objective space-relations in the retina or tactile retina; but why the mind *at all* converts the sum of qualitatively distinct feelings into an extensive space-image, for that we cannot see any reason in the physiological process; we are obliged even to question whether such exists, and can admit only a teleological reason, because through this marvellous process alone does the mind procure a basis for the cognition of an external world, whereas, without the space-intuition, it could never go beyond itself.

Ad. III. If we perceive this aim to be the sole reason, we must look upon the process in question itself as an instinctive action, as a purposive activity without purposive consciousness. We have accordingly again arrived at the sphere of the Unconscious, and must recognise the position of space in the perception of the individual consciousness (just as the position of space in creation of the real world), as an action of the *Unconscious*, since this process is by so much anterior to the possibility of any consciousness that it can never be looked upon as anything conscious. Kant, however, has nowhere so expressed himself, and considering the usual clearness and fearlessness of this great thinker, one must conclude that he never distinctly realised the complete unconsciousness of this same process. From this defect of his exposition arose, however, the opposition of sober common sense

to his doctrine, which knew that Space was *given* as a fact independent of the individual consciousness, and, indeed, in the space-relations from which only a protracted effort of abstraction detached the concept of Space, which last of all the negation of limit determined as infinite, whilst, according to Kant, the one infinite space stands as the original product of thought, in virtue of which spatial relations alone become possible. In all this, then, common sense was right, and Kant wrong, but in one point, and that the *chief*, Kant was right, that the form of space does not stalk into the mind from outside by means of physiological processes, but is spontaneously produced by it. But whereas Kant looks upon Space as an almost accidental form of sensibility due to the organisation of our nature, which might have been altogether different, and which has no prototype beyond subjectivity, we assert that Space has been given us as a real form of existence, so that the Unconscious formally performs one and the same function, when there planning in its unconscious representation the plurality of individuals to be created in space-relations, in order thereby to give to the will a spatially-realisable content, or here extending the sensations given in qualitatively-ordered series (mathematical dimensions) into the spatial intuition. Contingency and caprice would now have to be sought merely in a possible *deviation* from the path once entered upon, not in the *carrying out* of the form of individuation of space adopted once for all for this world (whether from logical necessity or from choice).

Ad. IV. Time has so much analogy with Space as a form of Thought and Being that they have ever been treated of together, and a thinker has always held similar opinions concerning both. This circumstance also tempted Kant to subject them to a common treatment in his "Transcendental Æsthetic." Yet, the differences between Space and Time, familiar to everybody, are important enough to call for a difference of treatment. If Time

were not directly transferable from the physiological process into the perception, it *would*, without doubt, be just as independently produced by the mind as Space. Perception, however, does not require this; for when we assumed that the mind reacts with a definite sensation on cerebral vibrations of a definite form, it was already implied that, if the stimulus is repeated, the reaction is also repeated, whether the stimuli follow one another in constant unbroken order, or intermittently. From this it further follows that sensation must last as long as these forms of the vibrations last, and another sensation only follows with change of the mode of vibration, for which, again, another is substituted after a certain interval. But the succession of unlike or diverse sensations is hereby immediately given without our needing to have recourse, as in the case of Space, to a spontaneous instinctive creation of the mind, no matter whether the affair is conceived materialistically or spiritualistically, for in both cases the objective succession of vibrations is translated into a subjective succession of sensations.

On the other hand, one might seem to be able to sustain the assertion that Time is not immediately imported into perception from the cerebral vibrations, by appealing to the fact that we regard every single feeling as a momentary, consequently timeless reaction of the mind, in which case certainly from a series of such momentary timeless psychical acts no temporal perception could directly arise, since the intervals between these moments would be absolutely void, and consequently could not be estimated. On closer examination the impossibility is immediately apparent; for only two cases are possible if sensation is to be something instantaneous. Either it springs from the *momentary* state of the brain, or it occurs only at the *close* of a certain period of cerebral movement. The former is intrinsically impossible, for the *moment* contains *no movement*, consequently nothing that can act upon the mind; the latter, however, may just as easily

lead to absurdity, because the reason for the mind reacting with sensation just after a *definite* period of time and not before and not after, while the movement calmly continues in the same manner, is by no means evident. If one arbitrarily chose to assume a complete period of oscillation as this time, it is not clear where the oscillation begins and ends, the starting-point being something arbitrarily chosen by us; or it is not obvious why a semi-oscillation, or a quarter or other smaller portion, should not accomplish the same, since, indeed, the *law of the whole vibration* is completely contained in the smallest portion of the whole vibration. As the *conceivably smallest portion* already contains the law of the whole vibration, it, too, must *contribute* its quota, and thus we come again to the *continuity* of sensation. That these differentials of sensation, so to speak, do not become conscious—that rather a not inconsiderable fragment of a second is requisite before a sensation can be individually taken note of by consciousness as a definite integral of these differential effects—might, perhaps, be due to the circumstance—firstly, that a change in the form of vibration which produces change of sensation is physically not to be comprehended from the fragment of a vibration, not even after a single entire vibration, but after several vibrations, by gradual passage of one form of vibration into another; and, secondly, that, as in a string caused to move sympathetically by a resonant note, every single vibration taken alone accomplishes too little, and that only the effects of many similar vibrations gradually added can gain a perceptible influence, which rises above the threshold of stimulation (see Introductory I. c., p. 34 ff.) This temporal addition, combined with the spatial addition of the effects of many molecules simultaneously vibrating in the same manner, makes it comprehensible how movements so minute as those in the brain call forth in the mind such powerful impressions, as, *e.g.*, a cannon-shot or thunder-clap.

We have now reviewed the four points above indicated, and I hope to have herewith not unessentially contributed to an understanding between philosophy and physical science, between which a wide gulf has yawned since the time of Kant. Our result is this: Space and Time are forms both of Being and of (conscious) Thought. Time is immediately translated into sensation from being, from the vibrations in the brain, because it is contained in the form of the *single* cerebral molecular vibration in the same way as in the external impulse. Space, as form of perception, must be created by an act of the Unconscious, because neither the space-relations of the *single* cerebral molecular vibration, nor the space-relations of the different vibrating parts of the brain, have any similarity or direct relation to the spatial figures and the spatial relations of position either of the real things or of the objects presented; but the spatial determinations of perceptions are probably governed by the system of local signs in the senses of Sight and Touch. Determinations of time, as well as of space, accordingly, are presented to consciousness as something ready-formed, given, are thus also rightly accepted as *empirical facts*, since consciousness has no idea of the producing processes of the same. From these given concrete determinations of Space and Time more general ones are afterwards abstracted, and the concepts Space and Time are gained as final abstractions, to which *as subjective ideas* infinity is justly ascribed as a negative predicate, because no conditions exist in the *subject* to place a limit to the possible extension of these ideas.

Having in this way made sure of the origin of the determinations of space and time as the foundation of all perceptions, we must return to the question of the connection of cerebral vibration and sensation—to the question, why the mind reacts on this form of vibration with this particular sensation. That there prevails here a perfect regularity we cannot doubt, considering the general

uniformity of Nature. We see the same sensations always follow with the same individual on the same external stimuli unless a demonstrable change of the bodily disposition takes place, which must, of course, announce itself in modified cerebral vibrations. That also in different individuals, so far as there is bodily agreement, the same stimuli call forth similar sensations, it is true we can never directly establish; but as all demonstrable variations certainly depend on varying structure of the sense-organs and nerves, we have no ground to suppose in this point an exception to the general uniformity of Nature, and accordingly assume that like cerebral vibrations call forth in all individuals like sensations. As this regular causal connection between this form of vibration and this sensation is in itself not more wonderful than any other incomprehensible uniform causal connection in the material world, *e.g.*, electricity and heat, is tolerably clear. On the other side, however, we incline without much hesitation to the opinion, that here, as there, causal links are present, which refer the hitherto existing complication of these events to simple laws, whose manifold interweaving brings to pass the majority of observed phenomena. Accordingly, if we cannot bring ourselves to stop at the result thus gained as a final one, but must suppose in these processes different connected links, yet this much is clear, that, so far as they belong to the psychical domain, they must exclusively belong to the province of the Unconscious. It is thus an unconscious process by which the acid appears to us sour, sugar sweet, this light red, that blue, these aerial vibrations as the note A, those as C. This is all that can be said about the origin of the quality of sensation, so far as our present knowledge extends.

With all this qualitative, intensively and extensively quantitative determination of sensation, we can, however, never get beyond the sphere of the subject. For the sense of sight represents locally extended images superficially,

but without any determination with respect to the third dimension, so that the area lies, so far, purely *within* the mind—is purely subjective; so that the mind is not at all aware of the eye as organ of vision, thus knows the visual image neither before the eye nor in the eye, but merely possesses it internally, just as a faint idea of memory can only be conceived in the interior space of the mind, and without reference to external space. Similarly is it with the perceptions of the sense of touch. Here, too, there is only superficial extension, which corresponds to the surface of the body, only much vaguer than in vision. Here only by means of the simultaneity of the same perception at several places, united with certain feelings of muscular movement, do experiences occur, with whose help the mind can effect the fixation of the tactile perceptions on the epidermis by other processes, so that these can now be fixed in respect to the third dimension, as it were. Many physiologists assert, indeed, that this is immediately the case, according to the law of the eccentric phenomenon, and I shall not dispute it; this much is settled, that when this point is reached, when the internal sensations are so fixed in respect of the third dimension that they coincide objectively with the epidermis of the body, and, according to my view, in the case of the eye with the retina—that then it is still by no means apparent how the step is to be taken outwards from the subjective *in virtue of perception or of conscious thought.* For perception, at the most, never points beyond the limit of one's own body—in my view even remaining within the mind without pointing to one's own body at all. No conscious process of thought developing itself by means of the preceding experiences, moreover, leads to the supposition of an external object; here, again, instinct, or the Unconscious, must lend a helping hand in order to fulfil the purpose of perception, the cognition of the external world. Accordingly, the animal and the child instinc-

tively projects its sense-perceptions as objects outside itself; and, accordingly, to this day, every uninstructed human being thinks he perceives the things themselves, because his perceptions, with the determination of externality, *instinctively* become objects to him. Thus only is it possible that the world of *objects* stands there ready for any being, without the idea of the *subject* occurring to it, whilst in conscious thought subject and object must necessarily spring simultaneously from the ideational process. It is, therefore, wrong to posit the concept of causality as mediator for a conscious segregation of the object, for objects are there long before the causal concept has arisen; and even were this not the case, yet, *even then*, the subject must be simultaneously gained with the object. Undoubtedly, from the *philosophic* point of view, causality is the sole means of getting beyond the mere ideational process to the subject and object; undoubtedly for the consciousness of the cultivated understanding, the object is only contained in perception as *its external cause;* undoubtedly the unconscious process, which lies at the bottom of the first apperception of the object, may be analogous to this philosophic conscious process,—thus much is certain, that the process, as whose result the external object confronts consciousness ready formed, is a thoroughly unconscious one, and consequently, if causality plays a part in it—which for the rest we can never directly determine,—it can yet by no means be said, as by Schopenhauer, that *the* a priori *given concept of causality produces the external object*, because, in this mode of expression, the action must be conceived as a conscious one, which it decidedly cannot be, because it is formed much later, and, moreover, at first from reciprocal relations of the *already formed* objects.

Having got so far in this way as to see in perceptions external objects, the next point to be considered is the *elaboration* of the perceptions, *e.g.*, in vision the sight of distance reckoned from the eye, single vision with two eyes,

sight of the third dimension in bodies, &c., and what corresponds thereto in other senses, as is discussed at length in so many manuals of physiology, psychology, &c. The processes which bring about this closer understanding, belong partly, indeed, to consciousness; in greater part, however, they fall into the domain of the Unconscious (comp. Wundt "Beiträge zur Theorie der Sinneswahrnehmung," as well as the passages cited above, p. 39). "As the formation of perception by the single eye depends upon a series of psychical processes of an unconscious kind, so also the formation of binocular perception is nothing but an unconscious process of inference. . . . Thus it is not merely the special perception of depth to which the binocular act of vision necessarily leads, but it is, in addition, the representation of reflection and lustre, which arises therefrom in an altogether corresponding uniform manner" (Wundt, pp. 373, 374). "They (the unconscious psychical processes) are not merely those which form perceptions out of the unrelated sensations, but those also which bind the more immediate and simple perceptions themselves again into more compound ones, and thus bring *order and system* into the possession of our mind, before with consciousness that *light* is brought into this possession, which first teaches us ourselves to know it" (*ibid.* 375).

We might easily deceive ourselves concerning this relation, if we only reflected on the tardiness with which the *human* child attains to the full mastery of sense-perception. But if more exact investigation enables us here to perceive without difficulty, how small the elaboration of conscious thought is with children at the time, when they already possess this understanding of perception in full measure, the unconsciousness of all the needful processes among *animals* is evident at the first glance. The certainty with which these move soon after their birth, the propriety with which they comport themselves with respect to the outer world, would be impossible, if they did not instinctively possess this understanding of their sense-perceptions.

If, as should properly be done, we include under sensuous perception in the wider sense this full comprehension of the sense-impressions, we see that the coming to pass of sensuous perception, which forms the foundation of all conscious mental activity, is dependent on a whole series of unconscious processes, without which aids on the part of instinct Man and Animal would perish helplessly, since they would lack the means of perceiving and of making use of the outer world.

IX.

THE UNCONSCIOUS IN MYSTICISM.

THE word "mystical" is in everybody's mouth; everybody knows the names of celebrated mystics, everybody knows examples of the mystical. And yet how few understand the word, whose signification itself is mystical, and therefore can only be rightly comprehended by him who has within him a mystical vein, however weak it be. Let us try to get at the essence of the matter, by reviewing the various leading phenomena presented in the mysticism of different times and individuals.

We find among the largest number of mystics a turning away from active life and a falling back upon quietistic contemplation, even a striving after mental and bodily annihilation. This cannot, however, express the essence of mysticism; for the world's greatest mystic, Jacob Böhme, managed his household affairs in a methodical fashion, worked hard, and educated his children. Other mystics plunged so deeply into practical affairs as to come forward in the character of world-reformers; others professed theurgy and magic, or practical medicine, and undertook journeys for scientific purposes.—Another series of phenomena, with higher degrees of mysticism, are bodily fits, as convulsions, epilepsies, ecstasies, imaginations and fixed ideas of hysterical women and hypochondriacal men, visions of ecstatic or spontaneously-somnambulistic persons. All these wear so much the character of bodily disease, that the essence of mysticism certainly cannot

be looked for in them, although they are for the most part intentionally produced by voluntary fasting, asceticism, and continued concentration of the fancy on one point. Those, who in the history of mysticism evoked such repulsive phenomena, we should at the present day commiserate in mad-houses, but in their own time they were adored as prophets and persecuted and slain as martyrs; such unfortunates, *e.g.*, as took themselves to be Christ (Isaiah Stiefel, 1600) or God the Father himself. Nevertheless, it might be said the visions and ecstasies pass gradually into those purer and higher forms to which history owes so much; granted, certainly,—only this variable element must not be claimed as the essence of mysticism.—A third form is asceticism. It is a mad frenzy or a morbid delight when it is not embraced as an ethical system, which, however, is the case with Indian, Neo-Persian, and Christian penitents. Even then this is not necessarily mysticism, since, on the one hand, Schopenhauer has given us the proof that a person may be a clear thinker and yet regard asceticism as the only correct system; and, on the other hand, mysticism is just as compatible with the most unbridled, inordinate longing after enjoyments as with the strictest asceticism. A fourth series of phenomena in the history of mysticism are the wonders of the prophets, saints, and magicians occurring in every age. All that remains after tolerably strict criticism of these reports reduces itself to operations of healing, which may be comprehended partly as simply therapeutic, partly as conscious or unconscious magnetism, partly as sympathetic action, and admitted into the series of natural laws, if the magical-sympathetic action of mere will be allowed to pass as natural law. As long as this is refused, the latter certainly remains intrinsically mystical; but as soon as one gets accustomed to the phenomenon, it is not more mystical than the operation of any other natural law, of which we can make nothing at all, and yet do not on that account call mystical.

Hitherto we have spoken of how mystics have acted and lived, we have still to mention in what way they have spoken and written. In the first place, we are struck by the prevailingly figurative mode of expression, sometimes plain and simple, but more often high-sounding rant, not seldom accompanied by an equal extravagance in the matter as in the form. This depends partly on the nations and times to which the particular mystics belong; but, as we meet with the same phenomenon among poets and other writers, we cannot find therein the sure mark of the mystic. Further, we see in mystical writings, on the one hand, an exuberance of allegory, a love of far-fetched exegesis (as of the Bible, the Koran, and other writings or legends), or a mass of formularies (drawn from the Jewish, Mohammedan, and Christian cultus); on the other side, a schematism of an unscientific philosophy of Nature, full of fantastic and fanciful analogies (Albertus Magnus, Parcelesus, and others in the Middle Ages; Schelling, Oken, Steffens, Hegel, in more recent times). In these two phenomena likewise, essentially alike, and only different in their subject, we cannot find the character of the mystical. We see therein only the characteristic tendency of the human mind to systematise its conceptions, led astray by ignorance or disregard of the material and the principles of the natural sciences—playing at building card-houses, which the after-comer, who builds other card-houses, often does not give himself the trouble of blowing over, but which rather collapse of themselves, although not without having previously imposed on many another child. A characteristic, too, to which it has been often believed one may hold, is incomprehensibility and obscurity of style, because it is tolerably common to all mystical writings. However, it is not to be forgotten, firstly, that very few mystics have reduced their thoughts to writing, many have not even spoken, or done nothing more than narrate their visions; and secondly, that very many other writings are incom-

prehensible and obscure, to which neither their authors nor other people would apply the epithet mystical, for obscurity of expression may arise from obscurity of thought, deficient mastery of the material, awkwardness of style, and many other causes.

Consequently, none of the phenomena hitherto considered are fitted to reveal the nature of the mystical; but any one of them may, perhaps, serve to set off a mystical background, but is then only a dress casually put on by mysticism, and may just as well at another time have nothing at all to do with mysticism. The question now, then, is with respect to the common core and centre of all these phenomena in the cases in which we regard them as drapery of a mystical background. Any one would go quite astray who should regard Religion as this common kernel. Religion, as naive belief in revelation, is not in the least mystical, for what has become *manifest* to me through an authority recognised by me as perfectly valid, what can there be at all mystical in that, so long as I am absolutely content with this *external* revelation? And no religion asks more. But, further, it is also easy to see that there is a mysticism of irreligious superstition (*e.g.* black magic), or a mysticism of self-deification, which sets all good and bad gods at defiance, or a mysticism of irreligious philosophy, although experience shows that the latter, at any rate, prefers to make an external alliance with positive religion (*e.g.* Neoplatonism). In all this we should not fail to perceive that Religion is the ground and soil on which mysticism springs up most easily and luxuriantly; but it is by no means its *only* hotbed. Mysticism is rather a creeping plant, which grows up exuberantly on any support, and can agree equally well with the extremest opposites. Arrogance and humility, love of power and endurance, egoism and self-renunciation, continence and sensual excess, self-castigation and inordinate love of enjoyments, solitude and sociality, contempt for the world and vanity, quietism and active life,

nihilism and world-reformation, piety and impiety, illumination and superstition, originality and brutal stupidity, —all are equally compatible with mysticism.

Accordingly we have got so far as to see in all such extremes, in all the above-mentioned phenomena historically presented among the mystics, not the *essence* of mysticism, but *excrescences*, which have been produced partly by the spirit of the times and national character; partly by individual morbid disposition; partly by perverted religious, moral, and practical principles; partly by the infectious example of mental derangement; partly through dissatisfaction with the pressure of rude times, which, in secular life, had nothing at all enticing to offer, but could only deter the aspirant; partly by the danger subsequently to be mentioned of soaring too high inherent in the final goal of mysticism itself; partly by a concatenation of all sorts of causes resulting from the foregoing and other circumstances.

This negative examination appeared to me indispensable in order to clear up the notion of the mystical, which for most people is compounded of a *total of these morbid outgrowths* of mysticism, and thereby prevents the recognition of mysticism in its purer forms of manifestation. If now we once more return to consider the core of all these phenomena of genuine mysticism, this much will be evident, that it must be deeply founded in the inmost nature of man (if, like artistic tendencies, it is not developed in every one, at any rate uniformly in every one, or in the same directions); for with more or less diffusion it has accompanied the history of civilisation from early prehistoric times to the present day. It has doubtless changed its character with the spirit of the times, but no advance of civilisation has ever been able to repress it; it has maintained itself just as unconquerable in presence of the infidelity of materialism as against the terrors of the Inquisition. But mysticism has also performed priceless civilising *services* for the human race. Without

the mysticism of Neo-pythagoreanism, the Johannean Christianity would never have arisen; without the mysticism of the Middle Ages, the spirit of Christianity would have been submerged in Catholic idolatry and scholastic formalism; without the mysticism of the persecuted heretical communities from the beginning of the eleventh century, which, in spite of all suppressions, ever sprang up again with renewed energy under another name, the blessings of the Reformation would never have dispelled the darker shades of the Middle Age and opened the portals of the new era. Without mysticism in the mind of the German people, and among the heroes of modern German poetry and philosophy, we should have been so completely inundated by the shallow drifting sand of the French materialism in the last century, that we might not have got our heads free again for who knows how long. As for the human race as a whole, so also for the *individual.* So long as it keeps free from sickly and rank outgrowths, mysticism is of inestimable worth. For we, in fact, see that all mystics have felt exceedingly happy in developing their mystical tendencies, and have cheerfully endured all sorts of privation and sacrifice in order to remain faithful to their bent. One has only to think of Jacob Böhme and the inexpressible cheerfulness which accompanied him through all his trials, which yet certainly arose from a pure source, and neither withdrew him from his civil duties nor was troubled by foolish self-tormentings. Think of the mystical saints of antiquity, as Pythagoras, Plotinus, Porphyry, &c., who certainly practised extreme moderation and restraint, but no self-tormentings. Genuine mysticism is then something deeply founded in the inmost essence of man, *in itself* healthy, if also easily inclining to morbid growths, and of high value both for the individual and for humanity at large.

But what is it in fine? If we think away all that is worthless in the phenomenon, there will remain feeling, thought, and will, and indeed the content of each of the

three will also be able to occur non-mystically, namely, of thought and feeling in philosophy and religion, of will as conscious magical will-action (only *one single* content of feeling making an exception, because it can ever be *only* mystically produced, as we shall immediately see). But if now in all other cases it is *not the matter* which contains the specifically mystical element, it must be the *special way* in which the matter comes into consciousness and is in consciousness; and upon this we will first hear some mystics, when, after the previous explanations, we shall not be surprised to find names which are not usually reckoned among the mystics, just because these represent mysticism most free from disturbing accessories.

All founders of religion, and prophets, have declared that they have either received their wisdom personally from God, or, in composing their works, delivering their speeches, and doing their wonders, have been inspired by the Divine Spirit, which most of the higher religions have made an article of faith. It has also been believed of the later saints who have introduced any new doctrine or mode of life and repentance, that not the human but the Divine Spirit taught them, and they themselves believed it. Fuller information is given us by Jacob Böhme:— "I say before God . . . that I do not myself know how it happens to me that, without having the impelling will, I do not even know what I should write. For when I write the Spirit dictates it to me in great, wonderful knowledge, that I often do not know whether I am in my spirit in this world, and rejoice exceedingly, since then the constant and certain knowledge is given to me, and the more I seek the more I find, and always more deeply, that I also often think my sinful person too small and unworthy to teach such secrets, when the Spirit spreads my banner and says, 'See, thou shalt live for ever therein and be crowned, why art thou afraid?'" In the same way, in the "Aurora," he gives his reader the advice "that he should ask of God His Holy Spirit. For without the

illumination of the same thou wilt not understand these secrets, for the mind of man is a fast lock, that must first be opened; and that no man can do, for the Holy Spirit is the only key to it." As little as he holds it possible for another reader, could he himself understand his own writings if the Spirit should abandon him.—We go further and find that the Quakers set up the principle of subordinating the institution of the school, human wisdom, and the written word, and trusting solely to an *inner light*.—Bernhard of Clairvaux says: "Faith is a sure fore-feeling of a not yet wholly unveiled truth grasped by the will, and is based on authority or revelation; the (inner) intuition (*contemplatio*), on the contrary, is the certain and at the same time manifest cognition of the invisible." This is carried further by his school (Richard and Hugo of St. Victor), by which inner revelation is designated the deeper mystical knowledge, which becomes the portion only of the elect, as illumination of reason by the Spirit, as supernatural power of knowledge, as inner immediate intuition, which is exalted above reason.—

The champion of modern mysticism against rationalistic enlightenment is Hamann. He desires to know the content of the outer divine revelation vitally regenerated from the soil of his own spirit, and to find the solution of all contradictions in self-evident faith, which comes to him from feeling, from the immediate revelation of truth. What he shadowed forth Jacobi elaborated. He says (in various places): "Conviction by means of proofs is a second-hand certainty, rests on comparison, and can never be perfectly sure and complete. Now if every acceptation of truth which does not spring from rational grounds is faith, conviction from grounds of reason must itself come from faith, and receive its force solely from it.—He who knows must in the last resort depend on sensation or a feeling of the mind.—As there is a sensuous intuition through sense, so there is also a rational one through reason.—Each in its province is the final and uncondition-

ally valid.—Reason, like the faculty of the feelings, is the incorporeal organ for the perceptions of the super-sensible. Rational intuition, although given in exalted feelings, is yet truly objective.—Without the positive rational feeling of a higher than the world of the senses, the understanding could never transgress the sphere of the conditioned."

Fichte and Schelling accepted these views, whilst Kant in his categorical imperative only made use of them under the guise of formal knowledge of the understanding. Fichte says in the Introductory Lectures to the Theory of Science, "This doctrine presupposes an entirely new inner sense-organ through which a new world is given, that does not at all exist for the ordinary man. It is not exactly excogitating and creating a novelty, a something not already given, but the bringing together and reducing to unity of the given *by means of a new and yet to be developed sense.*" This "Rational Faith" of Jacobi receives from Schelling its most appropriate name—intellectual intuition—which is set up by the latter as the indispensable organ of our transcendental philosophising, as the principle of all demonstration, and as the unprovable, self-evident ground of all evidence, in a word, as the absolute act of knowledge,—as a kind of cognition which must always remain incomprehensible from the conscious empirical point of view, because it has not like it an *object*, because it *cannot at all appear in consciousness*, but falls outside of it (comp. Schelling, I., 1, pp. 181, 182). Thus have we followed this mode of attaining to the consciousness of a content from the crude figurative expression of a personal divine communication down to Schelling's intellectual intuition, and have herein found that which makes a feeling or a thought mystical in form.

If we ask how we have to conceive this immediate knowledge through intellectual intuition, Fichte and Schelling give us answers on this point also. Fichte says, in the "Facts of Consciousness":—"Man has in general nothing but experience, and he comes by everything

whereto he attains only through experience, through life itself. In the theory of the sciences, too, as the absolute highest potency, above which no consciousness can rise, nothing can at all occur which does not lie in actual consciousness or in experience, in the highest sense of the term." And Schelling corroborates ("Works," ii. vol. i. p. 326):—"For, to be sure, there are also those who speak of thought as an antithesis to all experience, *as if thought itself were not certainly also experience!*" Immediate or mystical knowledge is here very well included in the notion, *experience*, because it *is previously found* "in actual consciousness" *as given*, without the will being able to make any change in it. No matter whether this datum is given from within or from without, conscious will has, in either case, nothing to do with it, and consciousness, to which its unconscious background is just as unconscious, must accordingly accept its inspirations as something extraneous, whence arises the belief in divine or demoniac inspiration of the intellectual intuition in earlier times, and among those untrained in philosophy. Since consciousness knows that it has not derived its knowledge directly or indirectly from sense-perception, thereby being pre-eminently *immediate knowledge*, it can only have arisen through inspiration from the Unconscious, and we have accordingly comprehended the essence of the mystical—*as the filling of consciousness with a content (feeling, thought, desire) through involuntary emergence of the same from the Unconscious.*

We must accordingly claim clairvoyance and presentiment as essentially mystical—a subdivision of mysticism, so far as it has reference to thought,—and shall not be able to avoid finding something mystical also in every instinct, namely, so far as the unconscious clairvoyance of instinct appears in consciousness as presentiment, faith, or certainty. I shall further meet with assent after these considerations and those of the earlier chapters,

if, even in the most ordinary psychological processes, I characterise those thoughts and feelings as mystical in form, which owe their origin to an immediate intrusion of the Unconscious, thus before all the æsthetic feeling in contemplation and production, the origin of sensuous perception and the unconscious processes in thinking, feeling, and willing generally. This perfectly justifiable application meets with resistance only from vulgar prejudice, which sees marvel and mystery only in the extraordinary, but finds nothing obscure or marvellous in the things of every-day life—only because there is nothing rare and unusual in it. Certainly, one does not call a man, who only carries about in himself these ever-recurring mysteries, *a mystic;* for if this word is to mean more than human being, it must be reserved for the men who participate in the rarer phenomena of mysticism, namely, such inspirations of the Unconscious as go beyond the common need of the individual or of the race, *e.g.*, clairvoyants, through spontaneous somnambulism or natural disposition, or persons with a darker but frequently active power of presentiment (Socrates' "Daimonion"). I should also not object to the designating as mystics, in the province of their art, all eminent art-geniuses, who owe their productions predominantly to inspirations of their genius, and not to the work of their consciousness, be they in all other concerns of life as clear-headed as possible (*e.g.*, Phidias, Æschylus, Raphael, Beethoven); and he alone could take offence who has himself so little of the mystical vein in him, that the incommensurability of the genuine work of art with any rationalistic standard, as well as the infinity of its content, in respect of all attempts at definition, has not yet at all entered into his consciousness.

In philosophy I should like to extend the notion still further, and call every original philosopher a mystic, so far as he is truly original; for in the history of philosophy no high thought has ever been brought to

light by laborious conscious trial and induction, but has always been apprehended by the glance of genius, and then elaborated by the understanding. Add to that, that philosophy essentially deals with a theme which is most intimately connected with the one feeling *only* to be *mystically* apprehended, namely, the *relation of the individual to the Absolute.* All that has gone before only concerned such matter of consciousness as can or could arise in no other way, thus is here only called mystical, because the *form of its origin* is mystical; but now we come to an item of consciousness, which, in its inmost character, is *only* to be apprehended mystically, which thus also, *materially,* may be called mystical; and a human being who can produce this mystical content will have to be called pre-eminently a mystic.

To wit, *conscious thought* can comprehend the identity of the individual with the Absolute by a rational method, as we too have found ourselves on the way to this goal in our inquiry; but the Ego and the Absolute and their identity stand before it as three *abstractions,* whose *union* in the *judgment* is made probable, it is true, through the preceding proofs, yet an *immediate feeling of this identity* is not attained by it. The *authoritative belief* in an external revelation may credulously repeat the dogma of such a unity—the living feeling of the same cannot be engrafted or thrust on the mind from without, it can only spring up in the mind of the believer himself; in a word, it is to be attained neither by philosophy nor external revelation, but only mystically, by one with equal mystical proclivities, the more easily, indeed, the more perfect and pure are the philosophical notions or religious ideas already possessed. Therefore this feeling is the content of mysticism, *κατ' ἐξοχήν,* because it finds its existence *only* in it, and, at the same time, the *highest* and *ultimate,* if also, as we have seen before, by no means the only aim of all those who have devoted their lives to mysticism. Nay, we may even go

so far as to assert that the production of a certain degree of this mystical feeling, and the enjoyment lurking in it, is the sole *inner* aim of all religion, and that it is, therefore, not incorrect, if less significative, to apply the name *religious* feeling to it.

Further, if the highest blessedness lurks in this feeling for its possessor, as is confirmed by the experience of all mystics, the transition is manifestly easy to the endeavour to heighten this feeling in degree, by seeking to make the union between the Ego and the Absolute ever closer and more intimate. But it is also not difficult to see that we have here arrived at the point previously indicated, where mysticism spontaneously degenerates into the morbid, by overshooting its mark. Undoubtedly we must elevate ourselves for this purpose a little above the standpoint hitherto attained in our investigations. The unity, namely of the Absolute and the individual, whose individuality or egoity is given through consciousness, thus, in other words, the unity of the unconscious and conscious, is once for all given, inseparable and indestructible, except by destruction of the individual; wherefore, however, every attempt to make this unity more close than it is, is so absurd and useless. The way which, historically, has almost always been taken, is that of the annihilation of consciousness—the endeavour to let the individual perish in the Absolute. This, however, contains a great error, as if, when the goal of annihilation of consciousness was reached, the individual still existed; the Ego at once desires to be annihilated, and to subsist in order to enjoy this annihilation. Consequently this goal has hitherto been always only imperfectly attained on both sides, although the accounts of the mystics enable us to perceive that many on this path have attained an admirable height, or rather depth, so that I shall adduce a few illustrations. (True self-annihilation is, of course, only suicide; but here the contradiction is too patent for it to have often been the result of mysticism.)

Michael Molinos, the father of Quietism, says, among the eight-and-sixty propositions of his celebrated "Spiritual Guide," condemned by Innocent VI.:—"Man must annihilate his powers, and the soul annihilates itself when it ceases to effect anything. And if the soul has attained the mystical death, it can—having now returned to its fundamental cause, to God—will nothing further than what God wills." The mystics of the earlier part of the Middle Ages distinguish in different ways a greater or smaller number of stages; the last is always absorption, the same state as we already find described among the Buddhist gymnosophists, the modern Persian Ssufis, and the Hesychasts or quietists or Omphalists of Mount Athos. It is said that in absorption the human being is no longer aware of his body, perceives nothing external at all, nay not even his inner self. "To think of absorption is already to emerge from absorption." To die to one's ownness, to completely annihilate personality, and to let one's self be lost in the divine essence, is expressly demanded. Nay, even the essential forms of consciousness, space, and time must disappear, as we gather from a conversation of the prophet with Ssaid, where the latter says:—"Day and night have disappeared for me like a flash of lightning; I embraced at once eternity before and after the world; to those in such a state a hundred years and an hour are one and the same." All this is confirmed by the endeavour after identification with the Absolute, through annihilation of the individual consciousness.

The other equally conceivable way to the enhancement of unity would be the endeavour to let the Absolute perish in the Ego; this way also has been tried by high-soaring minds, but it is so daring, and the goal and the power and means at the command of the individual so disproportionate, that we need take no further account of it.

From mystics proceeded the religious revelations, from

mystics philosophy; mysticism is the common source of both. It is true that fear first created gods on earth, so far as it was fear, which first stirred up the fancy of mystical brains, but *what* they created was their own, and fear had no part therein. But when the first gods were once there, they propagated among themselves, and fear lost its function. Accordingly the old assertion so highly valued by theologians, of the god-consciousness dwelling in man is no fable, if there be also perfectly godless individuals and peoples, in whom it has never emerged; mysticism is Adam's scion, and *its* children are the ideas of the gods and their relation to man. How elevated and pure these ideas may have been even in quite early times in the esoteric doctrines of many peoples, is shown in the case of the Hindus, who have in effect implicitly possessed the whole history of philosophy, presenting in figurative and undeveloped form what we exhibit only too abstractly through only too many writers and volumes.

Thus I see in the whole history of philosophy nothing else than the conversion of a mystically-begotten content from the form of the image or the unproved assertion into that of the rational system, for which certainly often a new mystical production of single parts is required, which a later age finds already contained in the ancient writings.—It is naturally not wonderful, that from the moment when philosophy and religion get to be separated, they both deny their human-mystical origin; the former seeks to present its results as rationally acquired, the latter as external Divine revelation. For as long as the mystic abides by his results, without trying to give them a rational foundation, he is not yet philosopher, and this only becomes possible by his giving conscious reasoning its rights. But this he will not do until he prefers the latter to mysticism, and then he likes to renounce and forget the mystical source of his results, which will not be difficult for him, considering the obscurity of their mode

of origin. On the other hand, if the mystic thinks little of conscious reason, or naturally inclines to fanciful exposition, he will seek a pictorial-symbolical expression for his results, which of course can always be only an accidental and imperfect one. Now, as soon as he himself or his successors become incapable of grasping the idea lurking behind the symbols, and take those themselves for the truth, they cease again to be mystics and become religionists. As they themselves can neither mystically reproduce their symbols, nor are these rationally comprehensible, they must appeal to the authority of the founder for the truth of the same, and as human authority appears too small for such important affairs—possibly, too, the founder himself has already claimed to be recipient of divine communications—their truth is referred to the divine authority itself. Thus arise the moulds which shape the dogmatic content of religion. The more adequate are the symbols of the mystical Idea, the purer and sublimer is the religion; the more abstract and philosophical, however, must also the symbols be; the more inadequate and sensuous they are, the more does religion sink into superstitious idolatry and sacerdotal formalism. Now he who takes the symbols of religion again merely as symbols, and wishes to grasp the idea dwelling behind them, steps out of religion as such, which requires, and must require, literal belief in the symbols, and becomes again a mystic; and this is the usual way in which mysticism is formed, by clearer heads finding the historically given religion unsatisfactory, and desiring to grasp the profounder ideas which lurk behind its symbols. One sees now how closely related religion and mysticism are, and how they are yet somewhat different in principle; one sees also why an established church must always be hostile to mysticism.

If we now ask how it came to pass that mysticism, which brought to men the first revelations of the super-sensible did not stop there, but became converted into philosophy

and religion, the reason of this is shown in the vagueness of the purely mystical result, which must necessarily strive to acquire a form. As little as the mystical is in itself communicable, so little is it comprehensible for the consciousness of the thinker himself; it is like everything unconscious — a definite content to consciousness only when it has entered the forms of sensibility, as light, clearness, vision, image, symbol, or abstract thought. Previously it is only absolutely indefinite feeling, *i.e.* consciousness experiences nothing but blessedness or unblessedness absolutely. If, now, the feeling first becomes definite in images or thoughts of a certain kind, there dwells in this image or thought alone for consciousness the content of the mystical result; and it is consequently no wonder that, if with the weakening of the mystical energy the inspirations fail, consciousness cleaves to these sensuous residua—least of all, when others do this, to whom only these residua, and not the feelings united therewith, can be imparted, not that undefined somewhat which tells the productive mystic that his images and thoughts are still always an incomplete expression of the super-sensual idea. But communication requires still more: the other party desires to have not merely the What of the mystical results, but also the Why, for the productive mystic receives, it is true, through the way in which he arrives at it, an immediate certainty, but whence is a third person to obtain conviction? Religion helps itself here with the surrogate of authoritative faith annihilating independent judgment; philosophy, however, tries rationally to prove what it has mystically received, and thereby to make the private property of the mystic the public property of thinking humanity. Only too frequently, as could not well be otherwise, considering the difficulty of the subject, these rational proofs are unsuccessful, in that they, apart from what is really incorrect in them, depend again themselves on suppositions, of the truth of which conviction can only be mystically ac-

quired. And thus it comes to pass that the different philosophical systems, however imposing they are to many, yet have only full probative force for the author and for some few who are able to reproduce mystically in themselves the underlying suppositions (*e.g.*, Spinoza's Substance, Fichte's Ego, Schelling's Subject-Object, Schopenhauer's Will), and that those philosophical systems, which rejoice in most adherents, are just the poorest of all and most unphilosophical (*e.g.*, Materialism and rationalistic Theism).

Were I now to name the man whom I regard as the flower of philosophical mysticism, I should pronounce the name of *Spinoza:* his starting-point, the mystical Substance, his ultimatum[1] the mystical love of God, in which God loves himself, and all else sun-clear, according to mathematical methods.

Certainly Spinoza did not think himself a mystic, but rather supposed he had proved everything so surely that all must see it; and yet his system, imposing as it is, has nothing convincing about it, and convinces so few, because one must first be convinced of Substance in Spinoza's sense, which only a mystic can, or a philosopher who at the close of his system has reached the same by another path, and then no longer needs Spinozism. Similarly is it, however, with all other systems, excepting the few which, like those of Leibnitz and the English, begin from below, but then also do not get far, and, properly speaking, are not to be called systems. The complete rational proof of the mystical results can only appear at the close of the history of philosophy, for the latter consists, as has been said, altogether in the search for this proof.

Finally, we must not omit to call attention to the risk of error which lies in mysticism, and which is so much

[1] By his third kind of knowledge (the intellectual intuition, comp. above, p. 22 Obs.), by which alone those fundamental ideas of his system can be grasped in an adequate manner, and with full conviction of certainty (comp. "Ethics," part v., Prop. 25, Prop. 36 Obs., Prop. 42 Prop.), Spinoza himself admits the mystical nature of these conceptions.

worse in this than in rational thought, because the latter has in itself, and in the co-operation of others, the control and hope of improvement, but the error which has crept in in mystical form is ineradicable. One must not thereby, however, conceive the matter as if the Unconscious imparted false inspirations, but it then imparts none at all, and consciousness simply takes the images of its uninspired fancy for inspirations of the Unconscious, because it longs for them.

It is just as difficult, to distinguish a genuine inspiration of the Unconscious in the waking state in a mystical mood from mere freaks of fancy, as a clairvoyant dream from an ordinary one; as in the latter case only the result, so in the former only the purity and inner worth of the result, can decide this question. But as true inspirations are always rare conditions, it is easy to see that among all, who ardently long for such mystical suggestions, very many self-deceptions must occur for one true inspiration; it is therefore not astonishing how much nonsense mysticism has brought to light, and that it must in consequence be extremely repugnant to every rational mind.

END OF VOL. I.

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